

**STN SEARCH**

10/031,918

FILE 'HOME' ENTERED AT 14:23:11 ON 03 MAY 2005

=&gt; file reg

=&gt; s chalcone synthase/cn

L2 1 CHALCONE SYNTHASE/CN

=&gt; d

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN

RN 56803-04-4 REGISTRY

ED Entered STN: 16 Nov 1984

CN Synthase, flavanone (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Anthocyanidin synthase

CN Chalcone synthase

CN Chalcone synthetase

CN E.C. 2.3.1.74

CN Flavanone synthase

CN Flavanone synthetase

CN Naringenin-chalcone synthase

MF Unspecified

CI MAN

LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAPLUS,  
CASREACT, CIN, EMBASE, NAPRALERT, PROMT, TOXCENTER, USPAT2, USPATFULL

=&gt; file caplus

=&gt; s l2 and crystal?

L4 18 L2 AND CRYSTAL?

=&gt; d ibib abs 1-18

L4 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:775486 CAPLUS Full-text

DOCUMENT NUMBER: 142:293639

TITLE: An Aldol Switch Discovered in Stilbene Synthases  
Mediates Cyclization Specificity of Type III  
Polyketide SynthasesAUTHOR(S): Austin, Michael B.; Bowman, Marianne E.; Ferrer,  
Jean-Luc; Schroder, Joachim; Noel, Joseph P.CORPORATE SOURCE: Structural Biology Laboratory, Salk Institute for  
Biological Studies, La Jolla, CA, 92037, USASOURCE: Chemistry & Biology (2004), 11(9), 1179-1194  
CODEN: CBOLE2; ISSN: 1074-5521

PUBLISHER: Cell Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Stilbene synthase (STS) and chalcone synthase (CHS) each catalyze the formation of a tetraketide intermediate from a CoA-tethered phenylpropanoid starter and three mols. of malonyl-CoA, but use different cyclization mechanisms to produce distinct chemical scaffolds for a variety of plant natural products. Here we present the first STS crystal structure and identify, by mutagenic conversion of alfalfa CHS into a functional stilbene synthase, the structural basis for the evolution of STS cyclization specificity in type III polyketide synthase (PKS) enzymes. Addnl. mutagenesis and enzymic characterization confirms that electronic effects rather than steric factors balance competing cyclization specificities in CHS and STS. Finally, we discuss the problematic in vitro reconstitution of plant stilbenecarboxylate pathways, using insights from existing biomimetic polyketide cyclization studies to generate a novel mechanistic hypothesis to explain stilbenecarboxylate biosynthesis.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:43803 CAPLUS Full-text

DOCUMENT NUMBER: 141:119201

TITLE: Purification of recombinant type III polyketide  
synthases from Pinus densiflora and its  
crystallization

AUTHOR(S): Itoh, Y.; Mikami, B.; Sakai, F.; Kuroda, H.

CORPORATE SOURCE: Laboratory of Gene Expression, Morinaga Milk Industry  
Co., Ltd., Japan

SOURCE: Wood Research (2003), 90, 3-4

CODEN: WDRSAU; ISSN: 0049-7916  
 PUBLISHER: Kyoto University, Wood Research Institute  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Stilbene synthase (STS) and chalcone synthase (CHS) in genus Pinus are key enzymes in the resp. formations of the stilbenoid and flavonoid carbon skeletons. They belong to polyketide super-gene family and classified into type III polyketide synthase. Three STS clones (PDSTS1, PDSTS2 and PDSTS3) and one CHS clone have been isolated from Pinus densiflora. The over-expression and purification of recombinant PDCHSX and PDSTS2 in Escherichia coli were carried out. No PDSTS2 crystals were observed under any of the conditions tested. However, PDCHSX crystals were grown and subjected to X-ray diffraction.  
 REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:866479 CAPLUS Full-text  
 DOCUMENT NUMBER: 140:232538  
 TITLE: Molecular characterization of transparent testa (tt) mutants of Arabidopsis thaliana (ecotype Estland) impaired in flavonoid biosynthetic pathway  
 AUTHOR(S): Bharti, Arvind K.; Khurana, Jitendra P.  
 CORPORATE SOURCE: Department of Plant Molecular Biology, University of Delhi South Campus, New Delhi, 110021, India  
 SOURCE: Plant Science (Amsterdam, Netherlands) (2003), 165(6), 1321-1332  
 CODEN: PLSCE4; ISSN: 0168-9452  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Detailed anal. of four transparent testa (tt) mutants of Arabidopsis thaliana (ecotype Estland) that lack anthocyanin pigments indicated that three are allelic to known mutants tt3, tt4 and ttg1 (mutants of DFR, CHS and TTG1 genes, resp.) while the fourth represents a new tt mutant (tt17). It is known through 3-D crystal structure anal. of CHS2 in Medicago [Nat. Struct. Biol. 6 (1999) 775] that Cys164 (key active site residue) is activated by His303 (corresponds to His309 in Arabidopsis). The substitution of His309 by Tyr309 in tt4 (Est) mutant analyzed in this study causes instability of CHS protein, thus providing evidence for the functional significance of this histidine residue. The ttg1 (Est) mutant harbors a change from Ser101 to Phe101 in the region preceding the WD-repeats, indicating a critical role of Ser101 in the function of transcriptional regulator TTG1. In tt3 (Est) mutant, 7 bp deletion generates pre-mature stop codon. The nature and function of TT17 in anthocyanin biosynthesis is yet to be defined. This study also revealed reduced transcript abundance of ACCase in all four tt mutants examined, suggesting it to be a control point for flux of supply products from primary to secondary metabolism  
 REFERENCE COUNT: 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2003:246615 CAPLUS Full-text  
 DOCUMENT NUMBER: 138:316531  
 TITLE: The chalcone synthase superfamily of type III polyketide synthases  
 AUTHOR(S): Austin, Michael B.; Noel, Joseph P.  
 CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA, 92037, USA  
 SOURCE: Natural Product Reports (2003), 20(1), 79-110  
 CODEN: NPRRDF; ISSN: 0265-0568  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review. This review covers the functionally diverse type III polyketide synthase (PKS) superfamily of plant and bacterial biosynthetic enzymes, from the discovery of chalcone synthase (CHS) in the 1970s through the end of 2001. A broader perspective is achieved by a comparison of these CHS-like enzymes to mechanistically and evolutionarily related families of enzymes, including the type I and type II PKSs, as well as the thiolases and  $\beta$ -ketoacyl synthases of fatty acid metabolism. As CHS is both the most frequently occurring and best studied type III PKS, the structure and mechanism of this enzyme has been examined in detail. The in vivo functions and biol. activities of several classes of plant natural products derived from chalcones are also discussed. Evolutionary mechanisms of type III PKS divergence are considered, as are the biol. functions and activities of

each of the known and functionally divergent type III PKS enzyme families (currently 12 in plants and 3 in bacteria). A major focus of this review is the integration of information from genetic and biochem. studies with the unique insights gained from protein x-ray crystallog. and homol. modeling. This structural approach has generated a number of new predictions regarding both the importance and mechanistic role of various amino acid substitutions observed among functionally diverse type III PKS enzymes.

REFERENCE COUNT: 191 THERE ARE 191 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L4 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:555622 CAPLUS Full-text

DOCUMENT NUMBER: 137:121608

TITLE: Mutagenesis and crystal structure of  
polyketide synthases, and methods of altering the  
activity and substrate specificity of polyketide  
synthases

INVENTOR(S): Noel, Joseph P.; Austin, Michael B.; Bowman, Marrianne  
E.

PATENT ASSIGNEE(S): The Salk Institute for Biological Studies, USA

SOURCE: PCT Int. Appl., 243 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002057418	A2	20020725	WO 2001-US48523	20011214
WO 2002057418	A3	20030821		
WO 2002057418	C2	20040506		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2004106175	A1	20040603	US 2003-450230	20031126
PRIORITY APPLN. INFO.:			US 2000-255811P	P 20001215
			WO 2001-US48523	W 20011214

AB The present invention comprises crystalline polyketide synthases, isolated non-native polyketide synthases having the structural coordinates of said crystalline polyketide synthases, and nucleic acids encoding such non-native polyketide synthases. Crystallization and crystal structure of wild-type and mutant CHS2 chalcone synthase from alfalfa are disclosed. Similar results have been obtained for the polyketide synthases stilbene synthase and 2-pyrone synthase. Functional conversion of chalcone synthase to stilbene synthase is disclosed. Also disclosed are methods of producing mutant polyketide synthases, and methods of altering the activity and/or substrate specificity of putative polyketide synthases.

L4 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:440407 CAPLUS Full-text

DOCUMENT NUMBER: 137:273809

TITLE: Cloning and characterisation of chs-specific DNA and  
cDNA sequences from hop (*Humulus lupulus* L.)

AUTHOR(S): Matousek, J.; Novak, P.; Briza, J.; Patzak, J.;  
Niedermeierova, H.

CORPORATE SOURCE: Institute of Plant Molecular Biology, AS CR, Ceske  
Budejovice, 37005, Czech Rep.

SOURCE: Plant Science (Shannon, Ireland) (2002), 162(6),  
1007-1018

CODEN: PLSCE4; ISSN: 0168-9452

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A complete sequence of chalcone synthase (CHS) gene from hop was cloned. The gene designated chsH1 consists of two exons and one 187 bp intron. CHS protein predicted from chsH1 cDNA has 42.5 kDa and retains conserved domains and residues including 26 amino acids at positions identical to those identified by crystallog. as characteristic for catalytic domains of alfalfa CHS (EC 2.3.1.74). Cloned CHSH1 protein shows specific CHS activity with 4-coumaroyl-CoA. Structure modeling revealed clear differences between CHSH1 and phlorisovalerophenone synthase, the only published CHS-like homolog from hop. Conserved motifs like H, and G boxes characteristic for the light regulated and stress inducible genes were identified within promoter region of chsH1 gene. Highly specific expression of chsH1 mRNA was detected by quant. RT PCR in glandular trichomes during cone maturation. Much lower, but significant levels of chsH1 mRNA were detected at the stage of hop flowering in petioles (100%), developed flowers (96%), and in stem apexes (78%), while the lowest levels of mRNA were found in the roots (31%) and leaf blades (9%). Southern blot analyses predicted at least five addnl. chs-like genes related to chsH1. A genomic arrangement different from phlorisovalerophenone synthase sequences was found for these genes. RFLP analyses using DNA from 15 genotypes revealed several distinct dendrogram clusters, suggesting specific re-arrangements of hop chs-like genes during evolution and/or during the breeding and selection processes.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:316612 CAPLUS Full-text

DOCUMENT NUMBER: 137:59422

TITLE: Expanding the biosynthetic repertoire of plant type III polyketide synthases by altering starter molecule specificity

AUTHOR(S): Jez, Joseph M.; Bowman, Marianne E.; Noel, Joseph P.

CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA, 92037, USA

SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2002), 99(8), 5319-5324  
CODEN: PNASA6; ISSN: 0027-8424

PUBLISHER: National Academy of Sciences

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Type III polyketide synthases (PKS) generate an array of natural products by condensing multiple acetyl units derived from malonyl-CoA to thioester-linked starter mols. covalently bound in the PKS active site. One strategy adopted by Nature for increasing the functional diversity of these biosynthetic enzymes involves modifying polyketide assembly by altering the preference for starter mols. Chalcone synthase (CHS) is a ubiquitous plant PKS and the first type III PKS described functionally and structurally. Guided by the three-dimensional structure of CHS, Phe-215 and Phe-265, which are situated at the active site entrance, were targeted for site-directed mutagenesis to diversify CHS activity. The resulting mutants were screened against a panel of aliphatic and aromatic CoA-linked starter mols. to evaluate the degree of starter mol. specificity in CHS. Although wild-type CHS accepts a number of natural CoA thioesters, it does not use N-methylanthraniloyl-CoA as a substrate. Substitution of Phe-215 by serine yields a CHS mutant that preferentially accepts this CoA-thioester substrate to generate a novel alkaloid, namely N-methylanthraniloyltriacyclic acid lactone. These results demonstrate that a point mutation in CHS dramatically shifts the mol. selectivity of this enzyme. This structure-based approach to metabolic redesign represents an initial step toward tailoring the biosynthetic activity of plant type III PKS.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:818808 CAPLUS Full-text

DOCUMENT NUMBER: 136:81887

TITLE: Structure-guided programming of polyketide chain-length determination in chalcone synthase

AUTHOR(S): Jez, Joseph M.; Bowman, Marianne E.; Noel, Joseph P.

CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA, 92037, USA

SOURCE: Biochemistry (2001), 40(49), 14829-14838

CODEN: BICHAW; ISSN: 0006-2960

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chalcone synthase (CHS) belongs to the family of type III polyketide synthases (PKS) that catalyze formation of structurally diverse polyketides. CHS synthesizes a tetraketide by

sequential condensation of three acetyl anions derived from malonyl-CoA decarboxylation to a p-coumaroyl moiety attached to an active site cysteine. Gly 256 resides on the surface of the CHS active site that is in direct contact with the polyketide chain derived from malonyl-CoA. Thus, position 256 serves as an ideal target to probe the link between cavity volume and polyketide chain-length determination in type III PKS. Functional examination of CHS G256A, G256V, G256L, and G256F mutants reveals altered product profiles from that of wild-type CHS. With p-coumaroyl-CoA as a starter mol., the G256A and G256V mutants produce notably more tetraketide lactone. Further restrictions in cavity volume such as that seen in the G256L and G256F mutants yield increasing levels of the styrylpyrone bis-noryangonin from a triketide intermediate. X-ray crystallog. structures of the CHS G256A, G256V, G256L, and G256F mutants establish that these substitutions reduce the size of the active site cavity without significant alterations in the conformations of the polypeptide backbones. The side chain volume of position 256 influences both the number of condensation reactions during polyketide chain extension and the conformation of the triketide and tetraketide intermediates during the cyclization reaction. These results viewed in conjunction with the natural sequence variation of residue 256 suggest that rapid diversification of product specificity without concomitant loss of substantial catalytic activity in related CHS-like enzymes can occur by site-specific evolution of side chain volume at position 256.

REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:540656 CAPLUS Full-text  
DOCUMENT NUMBER: 135:118535  
TITLE: Science of diversity: natural products science  
AUTHOR(S): Ebizuka, Yutaka  
CORPORATE SOURCE: Grad. Sch. Pharm., The Univ. Tokyo, Japan  
SOURCE: Farumashia (2001), 37(7), 607-612  
CODEN: FARUAW; ISSN: 0014-8601  
PUBLISHER: Pharmaceutical Society of Japan  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese

AB A review with 22 refs., on (1) diversity in the second metabolites of microorganisms and plants, (2) X-ray crystal structure, substrate specificity, and reaction products of chalcone synthase superfamily members, (3) phylogenetic tree of oxidosqualene cyclases of plants, (4) search for the functional sites of  $\beta$ -amyrin synthase, lupeol synthase, and other triterpene synthases, and (5) functional anal. of fungal polyketide synthases.

L4 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:131816 CAPLUS Full-text  
DOCUMENT NUMBER: 135:353427  
TITLE: Transgenic Dendranthema (Chrysanthemum)  
AUTHOR(S): DeJong, J.  
CORPORATE SOURCE: DLO-Centre for Plant Breeding and Reproduction  
RESEARCH (CPRO-DLO), Wageningen, 6700, Neth.  
SOURCE: Biotechnology in Agriculture and Forestry (2001),  
48(Transgenic Crops III), 84-94  
CODEN: BAFOEG; ISSN: 0934-943X  
PUBLISHER: Springer-Verlag  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Transformation of chrysanthemum has moved from the protocol development stage to the product development phase. Insertion of genes coding for insect toxic crystal proteins (Bt), chalcone synthase (CHS), and the TSWV-derived N gene have been reported. The first two genes have resulted in the required phenotypes, although the CHS gene was accompanied by somatic variation, probably due to the callus-based indirect regeneration protocol used. The N- gene, for resistance to TSWV, although incorporated, was not expressed. A number of protocols for regeneration and transformation are available.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:78503 CAPLUS Full-text  
DOCUMENT NUMBER: 134:143869  
TITLE: Crystal structure of polyketide synthases,  
methods of predicting the activity and substrate  
specificity of polyketide synthase, and methods of  
identifying potential polyketide synthase inhibitors  
and substrates

INVENTOR(S): Noel, Joseph P.; Ferrer, Jean-Luc; Jez, Joseph;  
Austin, Mike; Bowman, Marianne  
PATENT ASSIGNEE(S): The Salk Institute for Biological Studies, USA  
SOURCE: PCT Int. Appl., 213 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001007579	A2	20010201	WO 2000-US20674	20000727
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 1999-145898P P 19990727

AB The present invention comprises crystalline polyketide synthases, isolated non-native polyketide synthases having the structural coordinates of said crystalline polyketide synthases, and nucleic acids encoding such non-native polyketide synthases. Crystallization and crystal structure of wild-type and mutant CHS2 chalcone synthase from alfalfa are disclosed. Crystallization and crystal structure of stilbene synthase from *Pinus strubus* and 2-pyrone synthase from *Gerbera hybrida* are also disclosed. Also disclosed are methods of predicting the activity and/or substrate specificity of putative polyketide synthase, methods of identifying potential polyketide synthase substrates, and methods of identifying potential polyketide synthase inhibitors.

L4 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:51334 CAPLUS Full-text

DOCUMENT NUMBER: 134:262777

TITLE: Structural control of polyketide formation in plant-specific polyketide synthases

AUTHOR(S): Jez, Joseph M.; Austin, Michael B.; Ferrer, Jean-Luc; Bowman, Marianne E.; Schroder, Joachim; Noel, Joseph P.

CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA, 92037, USA

SOURCE: Chemistry & Biology (2000), 7(12), 919-930  
CODEN: CBOLE2; ISSN: 1074-5521

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyketide synthases (PKSs) generate mol. diversity by utilizing different starter mols. and by controlling the final length of the polyketide. Although exploitation of this mechanistic variability has produced novel polyketides, the structural foundation of this versatility is unclear. Plant-specific PKSs are essential for the biosynthesis of antimicrobial phytoalexins, anthocyanin floral pigments, and inducers of *Rhizobium* nodulation genes. 2-Pyrone synthase (2-PS) and chalcone synthase (CHS) are plant-specific PKSs that share 74% amino acid sequence identity. 2-PS forms the triketide, methylpyrone, from an acetyl-CoA starter mol. and 2 malonyl-CoAs. CHS uses a p-coumaroyl-CoA starter mol. and 3 malonyl-CoAs to produce the tetraketide, chalcone. The authors' goal was to elucidate the mol. basis of starter mol. selectivity and control of polyketide length in this class of PKS. Here, the 2.05 Å resolution crystal structure of 2-PS complexed with the reaction intermediate, acetoacetyl-CoA, was determined by mol. replacement. 2-PS and CHS share a common 3-dimensional fold, a set of conserved catalytic residues, and similar CoA-binding sites. However, the active site cavity of 2-PS is smaller than the cavity in CHS. Of the 28 residues lining the 2-PS initiation/elongation cavity, 4 positions vary in CHS. Point mutations at 3 of these positions in CHS (T197L, G256L, and S338I) yielded an enzyme that was functionally identical to 2-PS. Interestingly, the CHS T197L and S338I single mutants produced p-coumaroyltriacytic acid lactone from p-coumaroyl-CoA and malonyl-CoA. Thus, structural and functional characterization of 2-PS together with generation of a CHS triple mutant with an initiation/elongation cavity analogous to 2-PS demonstrates that cavity volume influences the choice of starter mol. and controls the final length of the polyketide. These results provide a structural basis for control of

polyketide length in other PKSs, and suggest strategies for further increasing the scope of polyketide biosynthetic diversity.

REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:910866 CAPLUS Full-text

DOCUMENT NUMBER: 134:174753

TITLE: Mechanism of chalcone synthase: pKa of the catalytic cysteine and the role of the conserved histidine in a plant polyketide synthase

AUTHOR(S): Jez, Joseph M.; Noel, Joseph P.

CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA, 92037, USA

SOURCE: Journal of Biological Chemistry (2000), 275(50), 39640-39646

CODEN: JBCHA3; ISSN: 0021-9258

PUBLISHER: American Society for Biochemistry and Molecular Biology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Polyketide synthases (PKS) assemble structurally diverse natural products using a common mechanistic strategy that relies on a cysteine residue to anchor the polyketide during a series of decarboxylative condensation reactions that build the final reaction product. Crystallog. and functional studies of chalcone synthase (CHS), a plant-specific PKS, indicate that a cysteine-histidine pair (Cys164-His303) forms part of the catalytic machinery. Thiol-specific inactivation and the pH dependence of the malonyl-CoA decarboxylation reaction were used to evaluate the potential interaction between these two residues. Inactivation of CHS by iodoacetamide and iodoacetic acid targets Cys164 in a pH-dependent manner (pKa = 5.50). The acidic pKa of Cys164 suggests that an ionic interaction with His303 stabilizes the thiolate anion. Consistent with this assertion, substitution of a glutamine for His303 maintains catalytic activity but shifts the pKa of the thiol to 6.61. Although the H303A mutant was catalytically inactive, the pH-dependent incorporation of [14C]iodoacetamide into this mutant exhibits a pKa = 7.62. Subsequent anal. of the pH dependence of the malonyl-CoA decarboxylation reaction catalyzed by wild-type CHS and the H303Q and C164A mutants also supports the presence of an ion pair at the CHS active site. Structural and sequence conservation of a cysteine-histidine pair in the active sites of other PKS implies that a thiolate-imidazolium ion pair plays a central role in polyketide biosynthesis.

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:744778 CAPLUS Full-text

DOCUMENT NUMBER: 134:111992

TITLE: The family of chalcone synthase-related proteins: functional diversity and evolution

AUTHOR(S): Schroder, Joachim

CORPORATE SOURCE: Institut fur Biologie II Universitat Freiburg, Freiburg, D-79104, Germany

SOURCE: Recent Advances in Phytochemistry (2000), 34(Evolution of Metabolic Pathways), 55-89

CODEN: RAPHBE; ISSN: 0079-9920

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review, with 140 refs. In recent years it has been shown that chalcone synthase (CHS) is one member of a family of plant polyketide synthases. Other members of the family that have been identified by function and sequence include the stilbene synthases (STS), acridone synthase (ACS), and a pyrone synthase (2PS). All of these proteins share about 65-70% identity with CHS. In addition, the properties of several other enzymes suggest that they may be members of this family, while precursor feeding studies suggest addnl. enzyme activities that may be appropriate for inclusion. A recently-published CHS crystal structure offers promise that it will be possible to understand how variations in primary sequence can be related to variations in function. Available data suggest that the functional diversity known in present-day plants could be the result of relatively recent modifications of CHS by gene duplication and mutation. The presence of CHS-related sequences in bacteria indicates that the basic functional unit predated the evolution of plants. The recent functional identification of such a protein from Streptomyces griseus suggests that the functional diversity in bacteria may be even larger than in plants.

REFERENCE COUNT: 140 THERE ARE 140 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L4 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:22087 CAPLUS Full-text  
DOCUMENT NUMBER: 132:191148  
TITLE: Dissection of Malonyl-Coenzyme A Decarboxylation from  
Polyketide Formation in the Reaction Mechanism of a  
Plant Polyketide Synthase  
AUTHOR(S): Jez, Joseph M.; Ferrer, Jean-Luc; Bowman, Marianne E.;  
Dixon, Richard A.; Noel, Joseph P.  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for  
Biological Studies, La Jolla, CA, 92037, USA  
SOURCE: Biochemistry (2000), 39(5), 890-902  
CODEN: BICHAW; ISSN: 0006-2960  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Chalcone synthase (CHS) catalyzes formation of the phenylpropanoid chalcone from one p-coumaroyl-CoA and three malonyl-CoA (CoA) thioesters. The three-dimensional structure of CHS [Ferrer, J.-L., Jez, J. M., Bowman, M. E., Dixon, R. A., and Noel, J. P. (1999) Nat. Struct. Biol. 6, 775-784] suggests that four residues (Cys164, Phe215, His303, and Asn336) participate in the multiple decarboxylation and condensation reactions catalyzed by this enzyme. Here, we functionally characterize 16 point mutants of these residues for chalcone production, malonyl-CoA decarboxylation, and the ability to bind CoA and acetyl-CoA. Our results confirm Cys164's role as the active-site nucleophile in polyketide formation and elucidate the importance of His303 and Asn336 in the malonyl-CoA decarboxylation reaction. We suggest that Phe215 may help orient substrates at the active site during elongation of the polyketide intermediate. To better understand the structure-function relationships in some of these mutants, we also determined the crystal structures of the CHS C164A, H303Q, and N336A mutants refined to 1.69, 2.0, and 2.15 Å resolution, resp. The structure of the C164A mutant reveals that the proposed oxyanion hole formed by His303 and Asn336 remains undisturbed, allowing this mutant to catalyze malonyl-CoA decarboxylation without chalcone formation. The structures of the H303Q and N336A mutants support the importance of His303 and Asn336 in polarizing the thioester carbonyl of malonyl-CoA during the decarboxylation reaction. In addition, both of these residues may also participate in stabilizing the tetrahedral transition state during polyketide elongation. Conservation of the catalytic functions of the active-site residues may occur across a wide variety of condensing enzymes, including other polyketide and fatty acid synthases.

REFERENCE COUNT: 86 THERE ARE 86 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:500226 CAPLUS Full-text  
DOCUMENT NUMBER: 131:254256  
TITLE: Structure of chalcone synthase and the molecular basis  
of plant polyketide biosynthesis  
AUTHOR(S): Ferrer, Jean-Luc; Jez, Joseph M.; Bowman, Marianne E.;  
Dixon, Richard A.; Noel, Joseph P.  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for  
Biological Studies, La Jolla, CA, 92037, USA  
SOURCE: Nature Structural Biology (1999), 6(8), 775-784  
CODEN: NSBIEW; ISSN: 1072-8368  
PUBLISHER: Nature America  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Chalcone synthase (CHS) is pivotal for the biosynthesis of flavonoid antimicrobial phytoalexins and anthocyanin pigments in plants. It produces chalcones by condensing 1 p-coumaroyl- and 3 malonyl-CoA thioesters into a polyketide reaction intermediate that cyclizes. Here, the crystal structures of recombinant alfalfa CHS alone and CHS complexed with substrate and product analogs revealed the active site architecture that defines the sequence and chemical of multiple decarboxylation and condensation reactions and provided a mol. understanding of the cyclization reaction leading to chalcone synthesis. The structure of CHS complexed with resveratrol also suggested how stilbene synthase, a related enzyme, uses the same substrates and an alternate cyclization pathway to form resveratrol. By using the 3-dimensional structure and the large database of CHS-like sequences, proteins likely to possess novel substrate and product specificity could be identified. The structure elucidates the chemical basis of plant polyketide biosynthesis and provides a framework for engineering CHS-like enzymes to produce new products.

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



L4 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:500108 CAPLUS Full-text  
DOCUMENT NUMBER: 131:240352  
TITLE: Probing plant polyketide biosynthesis  
AUTHOR(S): Schroder, Joachim  
CORPORATE SOURCE: Institut fur Related Biologie II, Universitat  
Freiburg, Freiburg, D-79104, Germany  
SOURCE: Nature Structural Biology (1999), 6(8), 714-716  
CODEN: NSBIEW; ISSN: 1072-8368  
PUBLISHER: Nature America  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

AB A review with 23 refs. The crystal structure of a chalcone synthase has been determined for the first time by J. L. Ferrer et al. (1999). Enzymes in this family have broad substrate specificities and participate in the biosynthesis of many secondary plant products, including compds. that provide defense against pathogens and precursors to the bitter acids in hops that flavor beer.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1958:6375 CAPLUS Full-text  
DOCUMENT NUMBER: 52:6375  
ORIGINAL REFERENCE NO.: 52:1156g-i,1157a-g  
TITLE: Interconversion of chalcones and flavanones of a  
phloroglucinol-type structure  
AUTHOR(S): Shimokoriyama, Masami  
CORPORATE SOURCE: Univ. Tokyo, Hongo  
SOURCE: Journal of the American Chemical Society (1957), 79,  
4199-202  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Poncirin (I) from Poncirus trifoliata (2 g.) in 25 cc. 50% EtOH refluxed 3 h. with 0.5 cc. 20% HCl, and the mixture kept overnight deposited 0.4 g. isosakuranin-1.5H<sub>2</sub>O (II), m. 172-8° (50% EtOH), [ $\alpha$ ]<sub>D</sub> 20D -48.4° (c 0.25, 90% EtOH). II (1 g.) heated 2 min. with 2 g. KOH and 4 cc. H<sub>2</sub>O on an H<sub>2</sub>O bath, cooled, and acidified with 20% HCl, and the orange-yellow crystalline precipitate recrystd. from 40 cc. 30% EtOH yielded 0.55 g. II chalcone-1.5H<sub>2</sub>O (III), m. 172-5°. I (1 g.) acidified to pH 2 and the oily precipitate treated with EtOAc and recrystd. from 50% EtOH gave I chalcone-H<sub>2</sub>O (IV), yellow needles, m. 195-205°. Naringin (V) (1.3 g.) from the peel of Citrus natsudaoidai gave similarly 0.7 g. V chalcone-H<sub>2</sub>O (VI), yellow needles, m. 185-200°. Hesperidin (VII) from Citrus nobilis peel gave in the same manner VII chalcone-2.5H<sub>2</sub>O (VIII), m. 180°, resolidified and remelted at 250°. All these chalcones gave an orange color in dilute aqueous alkali and in EtOH a brown color with FeCl<sub>3</sub>. III (1.0 g.) heated on an H<sub>2</sub>O bath with 0.3 g. NaOAc and 3 cc. H<sub>2</sub>O gave racemic II, m. 210-14° (50% EtOH), [ $\alpha$ ]<sub>D</sub> 20D -39.2° (c 0.25, 90% EtOH). IV (0.1 g.), 1 cc. 50% EtOH, and 0.1 cc. McIlvaine buffer (IX) of pH 7 heated 3 min. on the H<sub>2</sub>O bath and extracted with EtOAc, the extract evaporated in vacuo, and the residue recrystd. from absolute EtOH yielded 40 mg. racemic I, m. 170-5° with softening at 160°, [ $\alpha$ ]<sub>D</sub> 20D -82.5°. VI (0.1 g.) heated with 1 cc. 50% EtOH and 0.1 cc. IX of pH 6, added to 1 volume H<sub>2</sub>O, and kept overnight gave 80 mg. racemic III, m. 80-3°, [ $\alpha$ ]<sub>D</sub> 20D -72.1°. VIII was converted similarly to racemic VII, m. 250°. II (0.1 g.) in 6 cc. H<sub>2</sub>O added to 6 cc. solution containing 60 mg. emulsion, the mixture covered with PhMe, incubated 3 days at 30°, and filtered, and the residue recrystd. from aqueous EtOH yielded the aglycon of II, m. 170°, [ $\alpha$ ]<sub>D</sub> 20D -13.8° (c 1, 90% EtOH); it crystallized as a hemihydrate; the filtrate concentrated to about 1 cc. and chromatographed with 4:1:1 BuOH-AcOH-H<sub>2</sub>O gave a single spot for D-glucose (Rf 0.17). Racemized II gave in a similar manner inactive isosakuranetin, m. 190°. The behavior of chalcones in dilute EtOH solution (0.01M) (0.2 cc.) when added at 22° to 0.5 cc. H<sub>2</sub>O and 0.3 cc. IX was studied at various pH from 3 to 8 (the times in min. required for complete decolorization at pH 3, 4, 5, 6, 7, and 8 are given): III, -, -, -, 70, 22, 15; IV, -, -, -, 65, 22, 16; VI, -, -, 400, 70, 20, 15; VIII, -, -, 420, 80, 21, 15. The rates of the monomol. isomerization of VI (1.0 cc. 0.003M VI, 1.0 cc. IX, and 8.0 cc. H<sub>2</sub>O) were determined spectrophotometrically at pH 7, 6, 5, 4, and 3: 0.150, 0.055, 0.018, 0.001, and 0.000, resp. Peel (100 g.) of Citrus aurantium macerated twice with 300 cc. cold EtOH, the resulting almost colorless powder extracted with 300 cc. H<sub>2</sub>O, the aqueous solution mixed with 1/10 volume saturated aqueous (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and centrifuged, the supernatant saturated with (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, and the precipitate filtered off, redissolved, repptd. in the same manner, dissolved in 20 cc. H<sub>2</sub>O, dialyzed, and filtered gave a flavanone synthetase (X) solution Chalcone (10 mg.) in 0.5 cc. H<sub>2</sub>O

added to 0.5 cc. X solution, covered with PhMe, and incubated at 30° resulted in an almost complete conversion of the chalcone to the flavanone in 3 days. Similar solns. were prepared from the peels of *C. natsudaoidai*, *junos*, *nobilis*, *pseudoparadisi*, and of *Poncirus trifoliata*; while the 1st solution showed almost complete conversion in 5 days, the remaining solns. had only a slight activity. Solns. prepared similarly from the various citrus leaves and from the rays and leaves of *Cosmos sulphureus*, *Coreopsis lanceolata*, *C. tinctoria*, and *Dahlia variabilis* were inactive. No isomerization was observed if the X solution had been boiled 10 min.; 0.002M HgCl<sub>2</sub> also inhibited the activity, while 0.002M KCN did not show any effect on the X. VI (0.5 g.) in 25 cc. H<sub>2</sub>O and 25 cc. X solution covered with PhMe and incubated 3-4 days at 30° and the mixture refrigerated overnight gave III, m. 80-3° (from 20% EtOH) [ $\alpha$ ]20D -74.3° (c 1.90, EtOH). III gave similarly II, m. 175-90°, [ $\alpha$ ]20D -43.0° (c 0.25, 90% EtOH). IV gave I, m. 160-70°, [ $\alpha$ ]17D -84.2° (c 0.8, 90% EtOH). Coreopsin (1.2 g.) heated about 2 h. with 3.6 g. NaOAc and 18 cc. H<sub>2</sub>O on the H<sub>2</sub>O bath, treated with a few drops 20% AcOH, and extracted with MeOAc, the extract evaporated, the residue dissolved in 10 cc. EtOH, and the product recrystd. from EtOH yielded flavanocoreopsin, m. 166-8°, Rf 0.62 (4:1:2 BuOH-AcOH-H<sub>2</sub>O) (coreopsin, Rf 0.54); it gave a green color with FeCl<sub>3</sub>. The Rf values (given) were determined for the following compds.: III 0.79, II 0.76, IV 0.68, I 0.61, VI 0.64, III 0.54, VII 0.38, VIII 0.36. The UV absorption spectra of I, II, III, and IV are recorded.

=> s (e. (1w) c. 2.3.1.74) or (flavanone synthase) or (flavanone synthetase) or (chalcone synthase) or (chalcone synthetase) or (anthocyanidin synthase)

L12 425 FILE MEDLINE  
L13 1253 FILE SCISEARCH  
L14 332 FILE LIFESCI  
L15 1017 FILE BIOSIS  
L16 166 FILE EMBASE  
L17 39 FILE WPIDS

TOTAL FOR ALL FILES

L18 3232 (E. (1W) C. 2.3.1.74) OR (FLAVANONE SYNTHASE) OR (FLAVANONE SYNTHETASE) OR (CHALCONE SYNTHASE) OR (CHALCONE SYNTHETASE) OR (ANTHOCYANIDIN SYNTHASE)

=> s l18 and crystal?

TOTAL FOR ALL FILES

L25 77 L18 AND CRYSTAL?

=> s l25 not 2001-2005/py

L26 7 FILE MEDLINE  
L27 8 FILE SCISEARCH  
L28 1 FILE LIFESCI  
L29 7 FILE BIOSIS  
L30 6 FILE EMBASE  
L31 1 FILE WPIDS

TOTAL FOR ALL FILES

L32 30 L25 NOT 2001-2005/PY

=> dup rem l32

PROCESSING COMPLETED FOR L32

L33 12 DUP REM L32 (18 DUPLICATES REMOVED)

=> d ibib abs 1-12

L33 ANSWER 1 OF 12 MEDLINE on STN DUPLICATE 1  
ACCESSION NUMBER: 2001106037 MEDLINE Full-text  
DOCUMENT NUMBER: PubMed ID: 11006298  
TITLE: Mechanism of chalcone synthase. pKa of the catalytic cysteine and the role of the conserved histidine in a plant polyketide synthase.  
AUTHOR: Jez J M; Noel J P  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, California 92037, USA.  
CONTRACT NUMBER: CA80396 (NCI)  
SOURCE: Journal of biological chemistry, (2000 Dec 15) 275 (50) 39640-6.  
Journal code: 2985121R. ISSN: 0021-9258.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200102  
ENTRY DATE: Entered STN: 20010322  
Last Updated on STN: 20010322  
Entered Medline: 20010208

AB Polyketide synthases (PKS) assemble structurally diverse natural products using a common mechanistic strategy that relies on a cysteine residue to anchor the polyketide during a series of decarboxylative condensation reactions that build the final reaction product. Crystallographic and functional studies of chalcone synthase (CHS), a plant-specific PKS, indicate that a cysteine-histidine pair (Cys(164)-His(303)) forms part of the catalytic machinery. Thiol-specific inactivation and the pH dependence of the malonyl-CoA decarboxylation reaction were used to evaluate the potential interaction between these two residues. Inactivation of CHS by iodoacetamide and iodoacetic acid targets Cys(164) in a pH-dependent manner ( $pK(a) = 5.50$ ). The acidic  $pK(a)$  of Cys(164) suggests that an ionic interaction with His(303) stabilizes the thiolate anion. Consistent with this assertion, substitution of a glutamine for His(303) maintains catalytic activity but shifts the  $pK(a)$  of the thiol to 6.61. Although the H303A mutant was catalytically inactive, the pH-dependent incorporation of [(14)C]iodoacetamide into this mutant exhibits a  $pK(a) = 7.62$ . Subsequent analysis of the pH dependence of the malonyl-CoA decarboxylation reaction catalyzed by wild-type CHS and the H303Q and C164A mutants also supports the presence of an ion pair at the CHS active site. Structural and sequence conservation of a cysteine-histidine pair in the active sites of other PKS implies that a thiolate-imidazolium ion pair plays a central role in polyketide biosynthesis.

L33 ANSWER 2 OF 12 MEDLINE on STN DUPLICATE 2  
ACCESSION NUMBER: 2001120672 MEDLINE Full-text  
DOCUMENT NUMBER: PubMed ID: 11137815  
TITLE: Structural control of polyketide formation in plant-specific polyketide synthases.  
AUTHOR: Jez J M; Austin M B; Ferrer J; Bowman M E; Schroder J; Noel J P  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA 92037, USA.  
CONTRACT NUMBER: CA80396 (NCI)  
SOURCE: Chemistry & biology, (2000 Dec) 7 (12) 919-30.  
Journal code: 9500160. ISSN: 1074-5521.  
PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200102  
ENTRY DATE: Entered STN: 20010322  
Last Updated on STN: 20010322  
Entered Medline: 20010215

AB BACKGROUND: Polyketide synthases (PKSs) generate molecular diversity by utilizing different starter molecules and by controlling the final length of the polyketide. Although exploitation of this mechanistic variability has produced novel polyketides, the structural foundation of this versatility is unclear. Plant-specific PKSs are essential for the biosynthesis of anti-microbial phytoalexins, anthocyanin floral pigments, and inducers of Rhizobium nodulation genes. 2-Pyrone synthase (2-PS) and chalcone synthase (CHS) are plant-specific PKSs that share 74% amino acid sequence identity. 2-PS forms the triketide methylpyrone from an acetyl-CoA starter molecule and two malonyl-CoAs. CHS uses a p-coumaroyl-CoA starter molecule and three malonyl-CoAs to produce the tetraketide chalcone. Our goal was to elucidate the molecular basis of starter molecule selectivity and control of polyketide length in this class of PKS. Results: The 2.05 Å resolution crystal structure of 2-PS complexed with the reaction intermediate acetoacetyl-CoA was determined by molecular replacement. 2-PS and CHS share a common three-dimensional fold, a set of conserved catalytic residues, and similar CoA binding sites. However, the active site cavity of 2-PS is smaller than the cavity in CHS. Of the 28 residues lining the 2-PS initiation/elongation cavity, four positions vary in CHS. Point mutations at three of these positions in CHS (T197L, G256L, and S338I) altered product formation. Combining these mutations in a CHS triple mutant (T197L/G256L/S338I) yielded an enzyme that was functionally identical to 2-PS. Conclusions: Structural and functional characterization of 2-PS together with generation of a CHS mutant with an initiation/elongation cavity analogous to 2-PS demonstrates that cavity volume influences the choice of starter molecule and controls the final length of the polyketide. These results provide a structural basis for control of polyketide length in other PKSs, and suggest strategies for further increasing the scope of polyketide biosynthetic diversity.

L33 ANSWER 3 OF 12 MEDLINE on STN DUPLICATE 3

ACCESSION NUMBER: 2000120577 MEDLINE Full-text  
DOCUMENT NUMBER: PubMed ID: 10653632  
TITLE: Dissection of malonyl-coenzyme A decarboxylation from polyketide formation in the reaction mechanism of a plant polyketide synthase.  
AUTHOR: Jez J M; Ferrer J L; Bowman M E; Dixon R A; Noel J P  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, 10010 North Torrey Pines Road, La Jolla, California 92037, USA.  
CONTRACT NUMBER: CA80396 (NCI)  
SOURCE: Biochemistry, (2000 Feb 8) 39 (5) 890-902.  
Journal code: 0370623. ISSN: 0006-2960.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
OTHER SOURCE: PDB-1D61; PDB-1D6F; PDB-1D6H  
ENTRY MONTH: 200002  
ENTRY DATE: Entered STN: 20000314  
Last Updated on STN: 20000314  
Entered Medline: 20000229

AB Chalcone synthase (CHS) catalyzes formation of the phenylpropanoid chalcone from one p-coumaroyl-CoA and three malonyl-coenzyme A (CoA) thioesters. The three-dimensional structure of CHS [Ferrer, J.-L., Jez, J. M., Bowman, M. E., Dixon, R. A., and Noel, J. P. (1999) Nat. Struct. Biol. 6, 775-784] suggests that four residues (Cys164, Phe215, His303, and Asn336) participate in the multiple decarboxylation and condensation reactions catalyzed by this enzyme. Here, we functionally characterize 16 point mutants of these residues for chalcone production, malonyl-CoA decarboxylation, and the ability to bind CoA and acetyl-CoA. Our results confirm Cys164's role as the active-site nucleophile in polyketide formation and elucidate the importance of His303 and Asn336 in the malonyl-CoA decarboxylation reaction. We suggest that Phe215 may help orient substrates at the active site during elongation of the polyketide intermediate. To better understand the structure-function relationships in some of these mutants, we also determined the crystal structures of the CHS C164A, H303Q, and N336A mutants refined to 1.69, 2.0, and 2.15 Å resolution, respectively. The structure of the C164A mutant reveals that the proposed oxyanion hole formed by His303 and Asn336 remains undisturbed, allowing this mutant to catalyze malonyl-CoA decarboxylation without chalcone formation. The structures of the H303Q and N336A mutants support the importance of His303 and Asn336 in polarizing the thioester carbonyl of malonyl-CoA during the decarboxylation reaction. In addition, both of these residues may also participate in stabilizing the tetrahedral transition state during polyketide elongation. Conservation of the catalytic functions of the active-site residues may occur across a wide variety of condensing enzymes, including other polyketide and fatty acid synthases.

L33 ANSWER 4 OF 12 MEDLINE on STN DUPLICATE 4

ACCESSION NUMBER: 2000455674 MEDLINE Full-text  
DOCUMENT NUMBER: PubMed ID: 10966651  
TITLE: Structure and mechanism of the evolutionarily unique plant enzyme chalcone isomerase.  
AUTHOR: Jez J M; Bowman M E; Dixon R A; Noel J P  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, 10010 N. Torrey Pines Road, La Jolla, California 92037, USA.  
SOURCE: Nature structural biology, (2000 Sep) 7 (9) 786-91.  
Journal code: 9421566. ISSN: 1072-8368.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals; Space Life Sciences  
OTHER SOURCE: PDB-1EYP; PDB-1EYQ  
ENTRY MONTH: 200009  
ENTRY DATE: Entered STN: 20001005  
Last Updated on STN: 20001005  
Entered Medline: 20000928

AB Chalcone isomerase (CHI) catalyzes the intramolecular cyclization of chalcone synthesized by chalcone synthase (CHS) into (2S)-naringenin, an essential compound in the biosynthesis of anthocyanin pigments, inducers of Rhizobium nodulation genes, and antimicrobial phytoalexins. The 1.85 Å resolution crystal structure of alfalfa CHI in complex with

(2S)-naringenin reveals a novel open-faced beta-sandwich fold. Currently, proteins with homologous primary sequences are found only in higher plants. The topology of the active site cleft defines the stereochemistry of the cyclization reaction. The structure and mutational analysis suggest a mechanism in which shape complementarity of the binding cleft locks the substrate into a constrained conformation that allows the reaction to proceed with a second-order rate constant approaching the diffusion controlled limit. This structure raises questions about the evolutionary history of this structurally unique plant enzyme.

L33 ANSWER 5 OF 12 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2000:705078 SCISEARCH Full-text

THE GENUINE ARTICLE: 353FV

TITLE: Evidence for catalytic cysteine-histidine dyad in chalcone synthase

AUTHOR: Suh D Y; Kagami J; Fukuma K; Sankawa U (Reprint)

CORPORATE SOURCE: TOYAMA MED & PHARMACEUT UNIV, FAC PHARMACEUT SCI, TOYAMA 9300194, JAPAN (Reprint); TOYAMA MED & PHARMACEUT UNIV, FAC PHARMACEUT SCI, TOYAMA 9300194, JAPAN; INT TRADIT MED RES CTR, TOYAMA 9398224, JAPAN

COUNTRY OF AUTHOR: JAPAN

SOURCE: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (7 SEP 2000) Vol. 275, No. 3, pp. 725-730.

Publisher: ACADEMIC PRESS INC, 525 B ST, STE 1900, SAN DIEGO, CA 92101-4495.

ISSN: 0006-291X.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: LIFE

LANGUAGE: English

REFERENCE COUNT: 26

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Chalcone and stilbene synthases (CHS and STS) catalyze condensation reactions of p-coumaroyl-CoA and three C-2-units from malonyl-CoA, but catalyze different cyclization reactions to produce naringenin chalcone and resveratrol, respectively. Condensing activities of wild-type CHS and STS as well as STS-C60S mutant were inhibited by iodoacetamide (Idm) and diethyl pyrophosphate (DPC), DPC also inhibited malonyl-CoA decarboxylation activity of wild-type and C164S mutants of CHS and STS. Meanwhile, Idm treatment enhanced (two- to fourfold) malonyl decarboxylase activity of wild-type enzymes and STS-C60S, whereas this priming effect was not observed with C164S mutants of CHS and STS, indicating that the cysteine residue being modified by Idm is the catalytic Cys164 of CHS and STS. DPC inhibition of decarboxylation activity of wild-type CHS was pH-independent in the range of pH 5.8 to 7.8; however, its inhibitory effect on CHS-C164S increased as pH increased from 6.2 to 7.4 with a midpoint of 6.4. Based on the 3-D structure of CHS and the observed shift in microscopic pK(a), it was concluded that the histidine residue being modified by DPC in CHS is likely the catalytic His303 and that His303 forms an ionic pair (catalytic dyad) with Cys164 in wild-type CHS. In addition, our results showed that Cys60 in STS is not essential for the activity and only a single cysteine (Cys164) participates in the catalysis as in CHS. (C) 2000 Academic Press.

L33 ANSWER 6 OF 12 MEDLINE on STN DUPLICATE 5

ACCESSION NUMBER: 2001301150 MEDLINE Full-text

DOCUMENT NUMBER: PubMed ID: 11171140

TITLE: Molecular aspects of beta-ketoacyl synthase (KAS) catalysis.

AUTHOR: von Wettstein-Knowles P; Olsen J; Arnvig McGuire K; Larsen S

CORPORATE SOURCE: Genetics Department, Molecular Biology Institute, Copenhagen University, Oester Farimagsgade 2A, DK-1353 Copenhagen K, Denmark.. knowles@biobase.dk

SOURCE: Biochemical Society transactions, (2000 Dec) 28 (6) 601-7. Journal code: 7506897. ISSN: 0300-5127.

PUB. COUNTRY: England; United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200105

ENTRY DATE: Entered STN: 20010604

Last Updated on STN: 20010604

Entered Medline: 20010531

AB Crystal structure data for Escherichia coli beta-ketoacyl synthase (KAS) I with C(10) and C(12) fatty acid substrates bound in conjunction with results from mutagenizing residues in the active site leads to a model for catalysis. Differences from and similarities to the other Claisen enzymes carrying out decarboxylations reveal two catalytic mechanisms, one for KAS I and KAS II, the other for KAS III and chalcone synthase. A comparison of the structures of KAS I and KAS II does not reveal the basis of chain-length specificity. The structures of the Arabidopsis thaliana KAS family are compared.

L33 ANSWER 7 OF 12 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.  
on STN

ACCESSION NUMBER: 2000318144 EMBASE Full-text  
TITLE: Identification of amino acid residues important in the cyclization reactions of chalcone and stilbene synthases.  
AUTHOR: Suh D.-Y.; Fukuma K.; Kagami J.; Yamazaki Y.; Shibuya M.; Ebizuka Y.; Sankawa U.  
CORPORATE SOURCE: U. Sankawa, Intl. Traditional Med. Res. Ctr., Toyama International Health Complex, 151 Tomosugi, Toyama 939-8224, Japan. sankawa@toyama-prof-ihc.or.jp  
SOURCE: Biochemical Journal, (15 Aug 2000) Vol. 350, No. 1, pp. 229-235.  
Refs: 24  
ISSN: 0264-6021 CODEN: BIJOAK  
COUNTRY: United Kingdom  
DOCUMENT TYPE: Journal; Article  
FILE SEGMENT: 029 Clinical Biochemistry  
LANGUAGE: English  
SUMMARY LANGUAGE: English  
ENTRY DATE: Entered STN: 20000928  
Last Updated on STN: 20000928

AB Chalcone synthase (CHS) and stilbene synthase (STS) catalyze condensation reactions of p-coumaroyl-CoA and three C2 units from malonyl-CoA up to a common tetraketide intermediate but then catalyze different cyclization reactions to produce naringenin chalcone and resveratrol respectively. On the basis of sequence alignment with other condensing enzymes including 3-ketoacyl-(acyl carrier protein) synthases of polyketide and fatty-acid synthases, site-directed mutagenesis was performed on the active-site G372FGPG loops in CHS and STS. The CHS-P375G mutant showed a 6-fold decrease in overall condensing activity with selectively increased production of p-coumaroyltriacytic acid lactone (CTAL, the derailment product of the tetraketide intermediate). Meanwhile, resveratrol production by STS-P375G strongly decreased to give various products in the order CTAL > resveratrol.simeq.bisnoryangonin > naringenin. As a result, naringenin production (cross-reaction) by STS-P375G was close to 30% of resveratrol production. Both G374L mutants of CHS and STS showed no condensing activity with residual malonyl-CoA decarboxylase activity. These results suggested that the G372FGPG loop in CHS and STS contribute to a determination of the outcome during cyclization reactions by serving as a part of the active-site scaffold on which the stereochemistry of cyclization is performed. These observations provide the first biochemical indication that cyclization reactions are modulated by active-site geometry. The implications for the evolutionary relationship of these enzymes are also discussed.

L33 ANSWER 8 OF 12 MEDLINE on STN DUPLICATE 6

ACCESSION NUMBER: 1999356016 MEDLINE Full-text  
DOCUMENT NUMBER: PubMed ID: 10426957  
TITLE: Structure of chalcone synthase and the molecular basis of plant polyketide biosynthesis.  
AUTHOR: Ferrer J L; Jez J M; Bowman M E; Dixon R A; Noel J P  
CORPORATE SOURCE: Structural Biology Laboratory, The Salk Institute for Biological Studies, 10010 N. Torrey Pines Rd., La Jolla, California 92037, USA.  
SOURCE: Nature structural biology, (1999 Aug) 6 (8) 775-84.  
Journal code: 9421566. ISSN: 1072-8368.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
OTHER SOURCE: PDB-1BI5; PDB-1CGK; PDB-1CGZ; PDB-1CML  
ENTRY MONTH: 199908  
ENTRY DATE: Entered STN: 19990910  
Last Updated on STN: 20000303

Entered Medline: 19990824

AB Chalcone synthase (CHS) is pivotal for the biosynthesis of flavonoid antimicrobial phytoalexins and anthocyanin pigments in plants. It produces chalcone by condensing one p-coumaroyl- and three malonyl-coenzyme A thioesters into a polyketide reaction intermediate that cyclizes. The crystal structures of CHS alone and complexed with substrate and product analogs reveal the active site architecture that defines the sequence and chemistry of multiple decarboxylation and condensation reactions and provides a molecular understanding of the cyclization reaction leading to chalcone synthesis. The structure of CHS complexed with resveratrol also suggests how stilbene synthase, a related enzyme, uses the same substrates and an alternate cyclization pathway to form resveratrol. By using the three-dimensional structure and the large database of CHS-like sequences, we can identify proteins likely to possess novel substrate and product specificity. The structure elucidates the chemical basis of plant polyketide biosynthesis and provides a framework for engineering CHS-like enzymes to produce new products.

L33 ANSWER 9 OF 12 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 1999:386104 BIOSIS Full-text

DOCUMENT NUMBER: PREV199900386104

TITLE: Structure of chalcone synthase and the molecular basis of plant polyketide biosynthesis.

AUTHOR(S): Ferrer, Jean-Luc; Jez, Joseph M.; Bowman, Marianne E.; Dixon, Richard A.; Noel, Joseph P. [Reprint author]

CORPORATE SOURCE: Structural Biology Laboratory, Salk Institute for Biological Studies, 10010 N. Torrey Pines Rd., La Jolla, CA, 92037, USA

SOURCE: Nature Structural Biology, (Aug., 1999) Vol. 6, No. 8, pp. 775. print.  
ISSN: 1072-8368.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 28 Sep 1999  
Last Updated on STN: 28 Sep 1999

AB Chalcone synthase (CHS) is pivotal for the biosynthesis of flavonoid antimicrobial phytoalexins and anthocyanin pigments in plants. It produces chalcone by condensing one p-coumaroyl- and three malonyl-coenzyme A thioesters into a polyketide reaction intermediate that cyclizes. The crystal structures of CHS alone and complexed with substrate and product analogs reveal the active site architecture that defines the sequence and chemistry of multiple decarboxylation and condensation reactions and provides a molecular understanding of the cyclization reaction leading to chalcone synthesis. The structure of CHS complexed with resveratrol also suggests how stilbene synthase, a related enzyme, uses the same substrates and an alternate cyclization pathway to form resveratrol. By using the three-dimensional structure and the large database of CHS-like sequences, we can identify proteins likely to possess novel substrate and product specificity. The structure elucidates the chemical basis of plant polyketide biosynthesis and provides a framework for engineering CHS-like enzymes to produce new products.

L33 ANSWER 10 OF 12 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 1999:876623 SCISEARCH Full-text

THE GENUINE ARTICLE: 254BL

TITLE: Light-induced betacyanin and flavonol accumulation in bladder cells of *Mesembryanthemum crystallinum*

AUTHOR: Vogt T (Reprint); Ibdah M; Schmidt J; Wray V; Nimtz M; Strack D

CORPORATE SOURCE: INST PFLANZENBIOCHEM, WEINBERG 3, D-06120 HALLE, GERMANY (Reprint); GESELL BIOTECHNOL FORSCH MBH, D-38124 BRAUNSCHWEIG, GERMANY

COUNTRY OF AUTHOR: GERMANY

SOURCE: PHYTOCHEMISTRY, (OCT 1999) Vol. 52, No. 4, pp. 583-592.  
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.  
ISSN: 0031-9422.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: LIFE; AGRI

LANGUAGE: English

REFERENCE COUNT: 37

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Treatment of the halophyte *Mesembryanthemum crystallinum* L. (ice plant) (Aizoaceae) with high intensities of white light resulted in a rapid cell-specific accumulation of

betacyanins and flavonoids with 6-methoxyisorhamnetin 3-O-([(2 ''-E-feruloyl)]3'''-O-(beta-D- glucopyranosyl))-[(2 ''-O-beta-D-xylopyranosyl))-beta-D-glucopyranoside (mesembryanthin) as the predominant component, within bladder cells of the leaf epidermis. Induced accumulation of these metabolites was first detected 18 h after the initiation of light treatment in bladder cells located at the tip of young leaves followed by the bladder cells located on the epidermis of fully expanded leaves. UV-A light apparently is sufficient to induce accumulation of betacyanins and flavonoids. Application of 7-aminoindan 2-phosphonic acid, a specific inhibitor of phenylalanine ammonia-lyase (PAL; EC 4.3.1.5), not only inhibited the accumulation of flavonoids but also reduced betacyanin formation. Based on these observations we suggest these bladder cells as a model system to study regulation of betacyanin and flavonoid biosyntheses. (C) 1999 Elsevier Science Ltd. All rights reserved.

L33 ANSWER 11 OF 12 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 1993-167687 [20] WPIDS Full-text  
 DOC. NO. NON-CPI: N1993-128325  
 DOC. NO. CPI: C1993-074810  
 TITLE: Bacillus thuringiensis insecticidal crystal protein specific gene modification - by inactivating cryptic promoter site specific transcription initiation directable by RNA polymerase complex assembly, or DNA encoding abortive removable RNA.  
 DERWENT CLASS: C05 D16 P13  
 INVENTOR(S): CORNELISSEN, M; DOCKX, J; SOETAERT, P; STAM, M; VAN, AARSEN R  
 PATENT ASSIGNEE(S): (PLBZ) PLANT GENETIC SYSTEMS NV  
 COUNTRY COUNT: 38  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9309218	A1	19930513	(199320)*	EN	74
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA SE					
W: AT AU BB BG BR CA CH CS DE DK ES FI GB HU JP KP KR LK LU MG MN MW					
NL NO PL RO RU SD SE US					
AU 9229239	A	19930607	(199338)		
EP 611396	A1	19940824	(199433)	EN	
R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL SE					
JP 07500966	W	19950202	(199514)		
AU 657584	B	19950316	(199518)		
US 5952547	A	19990914	(199944)		

# APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9309218	A1	WO 1992-EP2547	19921030
AU 9229239	A	AU 1992-29239	19921030
EP 611396	A1	EP 1992-923318	19921030
		WO 1992-EP2547	19921030
JP 07500966	W	WO 1992-EP2547	19921030
		JP 1993-508173	19921030
AU 657584	B	AU 1992-29239	19921030
US 5952547	A	WO 1992-EP2547	19921030
		US 1994-232016	19941103

# FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 9229239	A Based on	WO 9309218
EP 611396	A1 Based on	WO 9309218
JP 07500966	W Based on	WO 9309218
AU 657584	B Previous Publ.	AU 9229239
	Based on	WO 9309218
US 5952547	A Based on	WO 9309218

PRIORITY APPLN. INFO: EP 1991-402920 19911030; EP  
 1992-400820 19920325  
 AN 1993-167687 [20] WPIDS Full-text



AB WO 9309218 A UPAB: 19931115

The modification comprises inactivating, pref. destroying or removing, in a coding region of the gene the process directing sequence element(s) (a) a cryptic promoter, e.g. min. promoter, in (anati) sense orientation, which may direct site-specific transcription initiation in a plant cell by partial or complete assembly of an RNA polymerase II initiation complex; and which contains a DNA regulatory element e.g. CCAAT or TATA, or: (b) a DNA encoding an abortive intron that, at the RNA level, causes entry of a precursor mRNA species in a splicing pathway and the precursor is processed by a plant cell so mRNA does not accumulate in cell cytoplasm.

Chimeric gene for transforming a plant cell, comprises the following operably-linked DNA fragments, in the same transcriptional unit: (a) the coding region of (I); (b) a promoter, expression of (I) directable in the plant cell; and (c) transcript 3'end formation and polyadenylation signals, pref. for expressing (I) in the plant cell, partic. that of the chalcone synthase gene.

USE - Useful for protecting plants from insect pests. Dwg.0/3

L33 ANSWER 12 OF 12 MEDLINE on STN DUPLICATE 7  
ACCESSION NUMBER: 92161821 MEDLINE Full-text  
DOCUMENT NUMBER: PubMed ID: 1536573  
TITLE: Expression cloning in Escherichia coli and preparative isolation of the reductase coacting with chalcone synthase during the key step in the biosynthesis of soybean phytoalexins.  
AUTHOR: Welle R; Schroder J  
CORPORATE SOURCE: Lehrstuhl fur Biochemie der Pflanzen, Biologisches Institut II, Universitat Freiburg, Germany.  
SOURCE: Archives of biochemistry and biophysics, (1992 Mar) 293 (2) 377-81.  
Journal code: 0372430. ISSN: 0003-9861.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199203  
ENTRY DATE: Entered STN: 19920410  
Last Updated on STN: 19920410  
Entered Medline: 19920324

AB The cDNA for the reductase involved in the biosynthesis of 6'-deoxychalcone (4,2',4'-trihydroxychalcone), the first specific intermediate in the pathway to soybean phytoalexins, was cloned into the expression vector pKK233-2 and transformed into Escherichia coli. Using this source, about 5 mg of homogeneous reductase was isolated from 45 g of cells. The protein purification protocol differs completely from the scheme applied to soybean cell cultures. Size, N-terminal and specific enzyme activities were identical for the plant and E. coli protein. The pure protein is fairly stable, retaining 70% of initial activity after storage at 5 degrees C during 4 weeks. This protein is used for crystallization and in the study of its protein-protein interaction with chalcone synthase.

=> log y

## WEST Search History





DATE: Tuesday, May 03, 2005

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=USPT,USOC,EPAB,JPAB; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L8	L2 and (alfalfa or sativa)	50
		<i>DB=PGPB; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L7	L6 and (alfalfa or sativa)	56
<input type="checkbox"/>	L6	L4 and crystal\$9	84
<input type="checkbox"/>	L5	L4 same crystal\$9	5
<input type="checkbox"/>	L4	(e adj2 c adj2 2.3.1.74) or flavanone synthase or flavanone synthetase or chalcone synthase or chalcone synthetase or anthocyanidin synthase	258
		<i>DB=USPT,USOC,EPAB,JPAB; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L3	L1 same crystal\$9	10
<input type="checkbox"/>	L2	L1 and crystal\$9	77
<input type="checkbox"/>	L1	(e adj2 c adj2 2.3.1.74) or flavanone synthase or flavanone synthetase or chalcone synthase or chalcone synthetase or anthocyanidin synthase	420

END OF SEARCH HISTORY

## Hit List

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs
Generate OACS				

Search Results - Record(s) 1 through 30 of 50 returned.

☐ 1. Document ID: US 6812381 B2

Using default format because multiple data bases are involved.

L9: Entry 1 of 50

File: USPT

Nov 2, 2004

US-PAT-NO: 6812381

DOCUMENT-IDENTIFIER: US 6812381 B2

**\*\* See image for Certificate of Correction \*\***

TITLE: DNA fragment having promoter function

DATE-ISSUED: November 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Uchimiya; Hirofumi	Kanagawa			JP
Arai; Satoshi	Saitama			JP
Fushimi; Takaomi	Saitama			JP
Tagawa; Michito	Saitama			JP
Fukuzawa; Hiromitsu	Saitama			JP

US-CL-CURRENT: 800/287; 435/252.3, 435/320.1, 435/419, 536/24.1, 800/298

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 2. Document ID: US 6759526 B2

L9: Entry 2 of 50

File: USPT

Jul 6, 2004

US-PAT-NO: 6759526

DOCUMENT-IDENTIFIER: US 6759526 B2

**\*\* See image for Certificate of Correction \*\***

TITLE: DNA fragment having promoter function

DATE-ISSUED: July 6, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Uchimiya; Hirofumi	Kawasaki			JP
Fukuzawa; Hiromitsu	Saitama			JP
Tagawa; Michito	Saitama			JP

US-CL-CURRENT: 536/23.1; 435/320.1, 435/419, 800/278

## ABSTRACT:

This invention provides a DNA fragment having a promoter function capable of expressing a structural gene which can be expressed in a plant, and discloses a DNA fragment having a promoter function in a plant which is originated from a gene encoding a rice metallothionein as shown by SEQ ID NO: 1, a vector comprising the DNA having the promoter function, a plant cell transformed by the vector; and a regenerated plant and seeds obtainable from the plant cells.

14 Claims, 0 Drawing figures  
Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	KUMC	Draw De
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☐ 3. Document ID: US 6747189 B1

L9: Entry 3 of 50

File: USPT

Jun 8, 2004

US-PAT-NO: 6747189

DOCUMENT-IDENTIFIER: US 6747189 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Maize glycine rich protein promoter compositions and methods for use thereof

DATE-ISSUED: June 8, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Orozco, Jr.; Emil M.	West Grove	PA		
Laccetti; Lucille B.	Groton	CT		

US-CL-CURRENT: 800/287; 435/419, 435/468, 536/24.1, 800/298, 800/306, 800/312,  
800/314, 800/317.2, 800/317.3, 800/317.4 , 800/320, 800/320.1, 800/320.2,  
800/320.3, 800/322

## ABSTRACT:

The current invention provides the Zea mays GRP (ZMGRP) promoter. Compositions comprising this sequence are described, as are plants transformed with such compositions. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the ZMGRP promoter by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

99 Claims, 4 Drawing figures  
Exemplary Claim Number: 82  
Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Drawn D
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☐ 4. Document ID: US 6723897 B2

L9: Entry 4 of 50

File: USPT

Apr 20, 2004

US-PAT-NO: 6723897

DOCUMENT-IDENTIFIER: US 6723897 B2

TITLE: Methods for controlling gibberellin levels

DATE-ISSUED: April 20, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brown; Sherri M.	Chesterfield	MO		
Elich; Tedd D.	Ballwin	MO		
Heck; Gregory R.	Crystal Lake Park	MO		
Kishore; Ganesh M.	St. Louis	MO		
Logusch; Eugene W.	Chesterfield	MO		
Logusch; Sherry J.	Chesterfield	MO		
Piller; Kenneth J.	St. Louis	MO		
Rao; Sudabathula	St. Louis	MO		
Ream; Joel E.	St. Louis	MO		
Baerson; Scott R.	St. Louis	MO		

US-CL-CURRENT: 800/290

## ABSTRACT:

Methods and materials are disclosed for the inhibition and control of gibberellic acid levels. In particular, nucleic acid sequences of copalyl diphosphate synthase, 3-.beta. hydroxylase, and 2-oxidase and additional nucleic acid sequences are disclosed. Gibberellic acid levels may be inhibited or controlled by preparation of a chimeric expression construct capable of expressing antisense RNA which suppresses the gibberellin biosynthetic pathway sequence. The antisense sequence is the complement of a copalyl diphosphate synthase sequence, a 3.beta.-hydroxylase sequence, or a C20-oxidase sequence. Administration of a complementing agent, preferably a gibberellin or gibberellin precursor or intermediate restores bioactivity.

1 Claims, 43 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 43

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Drawn D
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☐ 5. Document ID: US 6642437 B1

L9: Entry 5 of 50

File: USPT

Nov 4, 2003

US-PAT-NO: 6642437

DOCUMENT-IDENTIFIER: US 6642437 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Production of proteins in plant seeds

DATE-ISSUED: November 4, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lemaux; Peggy G.	Moraga	CA		
Cho; Myeong-Je	Alameda	CA		
Buchanan; Bob B.	Berkeley	CA		

US-CL-CURRENT: 800/287; 435/420, 435/424, 435/430, 435/430.1, 435/431, 435/69.1,  
435/69.7, 435/69.8, 800/278, 800/320, 800/320.1, 800/320.3

## ABSTRACT:

Methods for producing proteins in plant seeds are disclosed. Expression of the protein is driven by a seed-specific promoter and the protein is preferably expressed as a fusion polypeptide that includes a signal peptide that causes the protein to accumulate in a subcellular compartment to protect the protein.

5 Claims, 7 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 7

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	KWIC	Draw D
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☐ 6. Document ID: US 6635806 B1

L9: Entry 6 of 50

File: USPT

Oct 21, 2003

US-PAT-NO: 6635806

DOCUMENT-IDENTIFIER: US 6635806 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Methods and compositions for expression of transgenes in plants

DATE-ISSUED: October 21, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kriz; Alan L.	Gales Ferry	CT		
Luethy; Michael H.	Old Mystic	CT		
Voyles; Dale A.	Griswold	CT		

US-CL-CURRENT: 800/287; 536/24.1, 800/298, 800/300, 800/301, 800/302, 800/303,

800/312, 800/314, 800/317.2, 800/317.3, 800/317.4, 800/320, 800/320.1, 800/320.2,  
800/320.3

## ABSTRACT:

Methods and compositions for the expression of transgenes in monocot plants including maize are disclosed. In the invention, gene silencing is avoided by use of monocot-homeologous sequences from plants of the genus Coix for transformation. Included in these transgene sequences are Coix promoters, enhancers, coding sequences and terminators. Suitable alternatives to maize-derived transgenes are desirable for expression in maize in that homology-based gene silencing can limit or effectively eliminate transgene expression.

15 Claims, 12 Drawing figures

Exemplary Claim Number: 1,2

Number of Drawing Sheets: 7

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KUMC	Draw D
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☐ 7. Document ID: US H002074 H

L9: Entry 7 of 50

File: USPT

Jul 1, 2003

US-PAT-NO: H002074

DOCUMENT-IDENTIFIER: US H002074 H

TITLE: Fertile transgenic corn plants

DATE-ISSUED: July 1, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lundquist; Ronald C.	Minnetonka	MN		
Walters; David A.	Bloomington	MN		
Kirihara; Julie A.	Bloomington	MN		

US-CL-CURRENT: 800/320; 536/24.1, 800/278, 800/301, 800/302, 800/303

## ABSTRACT:

Fertile transgenic Zea mays (corn) plants which stably express recombinant DNA which is heritable are provided wherein said DNA preferably comprises a recombinant gene which encodes a seed storage protein, so that the amino acid profile of the corn is improved.

9 Claims, 11 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 8

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KUMC	Draw D
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☐ 8. Document ID: US 6583338 B2

L9: Entry 8 of 50

File: USPT

Jun 24, 2003

US-PAT-NO: 6583338

DOCUMENT-IDENTIFIER: US 6583338 B2

TITLE: Maize A3 promoter and methods for use thereof

DATE-ISSUED: June 24, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Kriz; Alan L.	Gales Ferry	CT		
Orozco, Jr.; Emil M.	West Grove	PA		
Griffor; Matt	N. Stonington	CT		

US-CL-CURRENT: 800/278; 435/252.3, 435/320.1, 435/413, 435/414, 435/415, 435/416,  
435/417, 435/418, 435/419, 435/468, 435/69.1, 536/23.1, 536/23.6, 536/24.1,  
800/260, 800/279, 800/281, 800/284, 800/287, 800/289, 800/290, 800/295, 800/300,  
800/312, 800/314, 800/317, 800/320, 800/320.1, 800/320.2, 800/320.3

## ABSTRACT:

The current invention provides the maize A3 promoter and actin 2 intron. Compositions comprising these sequences are described, as well as transformation constructs derived therefrom. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the A3 promoter directly by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

46 Claims, 15 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 16

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Knowl	Draw	De
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☐ 9. Document ID: US 6555655 B1

L9: Entry 9 of 50

File: USPT

Apr 29, 2003

US-PAT-NO: 6555655

DOCUMENT-IDENTIFIER: US 6555655 B1

TITLE: Coleopteran-toxic polypeptide compositions and insect-resistant transgenic plants

DATE-ISSUED: April 29, 2003

## INVENTOR-INFORMATION:



NAME	CITY	STATE	ZIP CODE	COUNTRY
Rupar; Mark J.	Wilmington	DE		
Donovan; William P.	Levittown	PA		
Chu; Chih-Rei	Exton	PA		
Pease; Elizabeth	Danville	PA		
Tan; Yuping	Fremont	CA		
Slaney; Annette C.	Burlington	NJ		
Malvar; Thomas M.	Troy	MO		
Baum; James A.	Webster Groves	MO		

US-CL-CURRENT: 530/350; 536/23.71

## ABSTRACT:

Disclosed are novel insecticidal polypeptides, and compositions comprising these polypeptides, peptide fragments thereof, and antibodies specific therefor. Also disclosed are vectors, transformed host cells, and transgenic plants that contain nucleic acid segments that encode the disclosed .delta.-endotoxin polypeptides. Also disclosed are methods of identifying related polypeptides and polynucleotides, methods of making and using transgenic cells comprising these polynucleotide sequences, as well as methods for controlling an insect population, such as Colorado potato beetle, southern corn rootworm and western corn rootworm, and for conferring to a plant resistance to a target insect species.

12 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KINC	Draw De
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☐ 10. Document ID: US 6541448 B2

L9: Entry 10 of 50

File: USPT

Apr 1, 2003

US-PAT-NO: 6541448

DOCUMENT-IDENTIFIER: US 6541448 B2

TITLE: Polypeptide compositions toxic to anthonomus insects, and methods of use

DATE-ISSUED: April 1, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Isaac; Barbara	St. Charles	MO		
Krieger; Elysia K.	Kirkwood	MO		
Mettus; Anne-Marie Light	Feasterville	PA		
Moshiri; Farhad	Chesterfield	MO		
Sivasupramanian; Sakuntala	Chesterfield	MO		

US-CL-CURRENT: 514/2; 424/246.1, 530/350

## ABSTRACT:

A novel gene encoding a Coleopteran inhibitory *Bacillus thuringiensis* insecticidal crystal protein is disclosed. The protein, tIC851, is insecticidally active and provides plant protection from at least cotton boll weevil, *Anthonomus grandis*, when applied to plants in an insecticidally effective composition.

6 Claims, 5 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KNOW	Draw De
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☐ 11. Document ID: US 6541257 B2

L9: Entry 11 of 50

File: USPT

Apr 1, 2003

US-PAT-NO: 6541257

DOCUMENT-IDENTIFIER: US 6541257 B2

TITLE: Method for preparing barley green regenerative tissue

DATE-ISSUED: April 1, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lemaux; Peggy G.	Moraga	CA		
Cho; Myeong-Je	Alameda	CA		

US-CL-CURRENT: 435/430.1; 435/410, 435/419, 435/420, 435/430, 435/431, 435/468,  
800/278, 800/320

## ABSTRACT:

A method of preparing green regenerative tissue of barley suitable for transformation is presented. The method includes incubating barley tissue on a callus induction medium under dim light. The dim light conditions are sufficient to produce green regenerative tissue. The callus induction media includes auxin and copper.

20 Claims, 2 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KNOW	Draw De
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☐ 12. Document ID: US 6486384 B1

L9: Entry 12 of 50

File: USPT

Nov 26, 2002

US-PAT-NO: 6486384

DOCUMENT-IDENTIFIER: US 6486384 B1

TITLE: Methods and compositions for transformation of cereals using cultured shoot meristematic tissue

DATE-ISSUED: November 26, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Zhang; Shibo	Albany	CA		
Cho; Myeong-Je	Alameda	CA		
Bregitzer; Phillip	American Falls	ID		
Lemaux; Peggy G.	Moraga	CA		

US-CL-CURRENT: 800/293; 435/419, 435/430, 435/470, 800/320, 800/320.2

## ABSTRACT:

Methods for transforming plants, particularly commercial genotypes of cereals, are provided. The methods involve transformation of meristematic organogenic tissue, and include the use of defined plant growth media. The methods disclosed provide more stable transgenic plants, and permit the transformation of varieties of cereals that are not amenable to transformation by conventional approaches.

7 Claims, 0 Drawing figures

Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KWIC	Draw De
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☐ 13. Document ID: US 6476212 B1

L9: Entry 13 of 50

File: USPT

Nov 5, 2002

US-PAT-NO: 6476212

DOCUMENT-IDENTIFIER: US 6476212 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Polynucleotides and polypeptides derived from corn ear

DATE-ISSUED: November 5, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lalgudi; Raghunath V.	Clayton	MO		
Ito; Laura Y.	Pleasanton	CA		
Sherman; Bradley K.	Oakland	CA		

US-CL-CURRENT: 536/23.6; 435/6, 536/24.3

## ABSTRACT:

The present invention provides purified, corn ear-derived polynucleotides (cdps) which encode corn ear-derived polypeptides (CDPs). The invention also provides for the use of cdps or their complements, oligonucleotides, or fragments in methods for determining altered gene expression, to recover regulatory elements, and to follow inheritance of desirable characteristics through hybrid breeding programs. The invention further provides for vectors and host cells containing cdps for the expression of CDPs. The invention additionally provides for (i) use of isolated and purified CDPs to induce antibodies and to screen libraries of compounds and (ii) use of anti-CDP antibodies in diagnostic assays.

5 Claims, 0 Drawing figures  
Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWAC	Draw. D.
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☐ 14. Document ID: US 6468523 B1

L9: Entry 14 of 50

File: USPT

Oct 22, 2002

US-PAT-NO: 6468523

DOCUMENT-IDENTIFIER: US 6468523 B1

TITLE: Polypeptide compositions toxic to diabrotic insects, and methods of use

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mettus; Anne-Marie Light	Feasterville	PA		
Baum; James A.	Doylestown	PA		

US-CL-CURRENT: 424/93.2; 424/93.461, 514/12, 514/2, 530/350, 530/825

ABSTRACT:

Disclosed is a novel Lepidopteran- and Coleopteran-active .delta.-endotoxin polypeptide, and compositions comprising the polypeptide, peptide fragments thereof, and antibodies specific therefor. Also disclosed are vectors, transformed host cells, and transgenic plants that comprise nucleic acid segments encoding the polypeptide. Also disclosed are methods of identifying related polypeptides and polynucleotides, methods of making and using transgenic cells comprising the novel sequences of the invention, as well as methods for controlling an insect population, such as the Western Corn Rootworm and Colorado potato beetle, and for conferring to a plant population resistance to the target insect species.

20 Claims, 1 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWAC	Draw. D.
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☐ 15. Document ID: US 6465203 B2

L9: Entry 15 of 50

File: USPT

Oct 15, 2002

US-PAT-NO: 6465203

DOCUMENT-IDENTIFIER: US 6465203 B2

TITLE: Glucan-containing compositions and paper

DATE-ISSUED: October 15, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nichols; Scott E.	Johnston	IA		

US-CL-CURRENT: 435/15, 435/170, 435/18, 435/278, 435/4, 435/6, 435/885, 435/886,  
536/1.11, 536/123.12, 536/124, 536/128 , 536/18.5, 800/284

## ABSTRACT:

The present invention provides methods of making paper, utilizing glucans, produced by the glucosyltransferase B, C or D enzyme of the species Streptococcus mutans, instead of modified starches. The present glucans are functionally similar to currently utilized modified starches and are particularly useful in the coating step of paper manufacture. The present glucans also exhibit thermoplastic properties and impart gloss to the paper during the coating step.

34 Claims, 0 Drawing figures

Exemplary Claim Number: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KWAC	Draw D
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☐ 16. Document ID: US 6437217 B1

L9: Entry 16 of 50

File: USPT

Aug 20, 2002

US-PAT-NO: 6437217

DOCUMENT-IDENTIFIER: US 6437217 B1

TITLE: Maize RS81 promoter and methods for use thereof

DATE-ISSUED: August 20, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Orozco, Jr.; Emil M.	West Grove	PA		
Laccetti; Lucille B.	Groton	CT		

US-CL-CURRENT: 800/278, 435/419, 435/430, 435/468, 536/23.6, 536/24.1, 800/260,  
800/275, 800/279, 800/287, 800/289, 800/295, 800/298, 800/300, 800/301, 800/302,  
800/303, 800/306, 800/312, 800/314, 800/317.2, 800/317.3, 800/317.4, 800/320,

800/320.1, 800/322

## ABSTRACT:

The current invention provides the maize RS81 promoter. Compositions comprising this sequence are described, as are plants transformed with such compositions. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the RS81 promoter by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

54 Claims, 7 Drawing figures

Exemplary Claim Number: 4

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KIMC	Draw D
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☐ 17. Document ID: US 6429357 B1

L9: Entry 17 of 50

File: USPT

Aug 6, 2002

US-PAT-NO: 6429357

DOCUMENT-IDENTIFIER: US 6429357 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Rice actin 2 promoter and intron and methods for use thereof

DATE-ISSUED: August 6, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Wu; Ray	Ithaca	NY		

US-CL-CURRENT: 800/278; 435/252.3, 435/320.1, 435/412, 435/413, 435/414, 435/416, 435/417, 435/418, 435/419, 435/468, 435/69.1, 536/23.1, 536/23.6, 536/24.1, 800/279, 800/281, 800/284, 800/289, 800/290, 800/292, 800/293, 800/294, 800/295, 800/298, 800/300, 800/301, 800/302, 800/303, 800/306, 800/312, 800/314, 800/317.2, 800/317.3, 800/317.4, 800/320, 800/320.1, 800/320.3, 800/322

## ABSTRACT:

The current invention provides regulatory regions from the rice actin 2 gene. In particular, the current invention provides the rice actin 2 promoter and actin 2 intron. Compositions comprising these sequences are described, as well as transformation constructs derived therefrom. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the rice actin 2 intron and/or promoter directly by genetic transformation, as well as by plant breeding methods. The actin 2 sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

32 Claims, 12 Drawing figures  
Exemplary Claim Number: 15  
Number of Drawing Sheets: 12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw De
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☐ 18. Document ID: US 6426446 B1

L9: Entry 18 of 50

File: USPT

Jul 30, 2002

US-PAT-NO: 6426446  
DOCUMENT-IDENTIFIER: US 6426446 B1

TITLE: Maize RS324 promoter and methods for use thereof

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Orozco, Jr.; Emil M.	West Grove	PA		
Laccetti; Lucille B.	Groton	CT		

US-CL-CURRENT: 800/278; 435/419, 435/430, 435/468, 536/23.6, 536/24.1, 800/260,  
800/275, 800/279, 800/287, 800/289, 800/295, 800/298, 800/300, 800/302, 800/303,  
800/306, 800/312, 800/314, 800/317.2, 800/317.3, 800/317.4, 800/320, 800/320.1,  
800/322

ABSTRACT:

The current invention provides the maize RS324 promoter. Compositions comprising this sequence are described, as are plants transformed with such compositions. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the RS324 promoter by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

54 Claims, 8 Drawing figures  
Exemplary Claim Number: 4  
Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw De
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☐ 19. Document ID: US 6392121 B1

L9: Entry 19 of 50

File: USPT

May 21, 2002

US-PAT-NO: 6392121  
DOCUMENT-IDENTIFIER: US 6392121 B1

TITLE: Gemini virus vectors for gene expression in plants

DATE-ISSUED: May 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mason; Hugh S.	Ithaca	NY		
Palmer; Kenneth E.	Vacaville	CA		
Hefferon; Kathleen L.	Ithaca	NY		
Mor; Tsafirir S.	Ithaca	NY		
Arntzen; Charles	Ithaca	NY		

US-CL-CURRENT: 800/287, 435/252.3, 435/252.33, 435/320.1, 435/410, 435/411,  
435/412, 435/414, 435/415, 435/417, 435/430 , 435/468, 435/469, 435/470, 536/23.1,  
536/23.2, 536/23.6, 536/24.1, 800/278, 800/280, 800/293, 800/295, 800/298, 800/312,  
800/317.2, 800/317.3, 800/317.4, 800/320.1, 800/320.2, 800/320.3

ABSTRACT:

A gene amplification system based on plant viral genetic elements dramatically increases foreign protein production in plants. A safer and more economical production system for vaccines and antibodies in recombinant plants grown using agricultural practice is described. The high-level expression system uses the replicative process of a plant mastrevirus, exemplified by bean yellow dwarf virus (BeYDV). The expression system is preferably inducible to avoid interference with plant growth and development. Developmental cues, such as fruit ripening, are employed to trigger expression of the foreign protein using a tissue-specific promoter. A single, stably integrated expression cassette for foreign protein is replicated extrachromosomally in ripening fruit, forming hundreds of transcriptionally competent copies. Preferred plant hosts include tomato as a model system and soybean for production of large quantities of protein at high total protein levels.

66 Claims, 52 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 44

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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☐ 20. Document ID: US 6326527 B1

L9: Entry 20 of 50

File: USPT

Dec 4, 2001

US-PAT-NO: 6326527

DOCUMENT-IDENTIFIER: US 6326527 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Method for altering the nutritional content of plant seed

DATE-ISSUED: December 4, 2001

INVENTOR-INFORMATION:



NAME	CITY	STATE	ZIP CODE	COUNTRY
Kirihara; Julie A.	Bloomington	MN		
Hibberd; Kenneth A.	Falcon Heights	MN		
Anthony; Janice	Wakefield	RI		

US-CL-CURRENT: 800/278; 800/285, 800/286, 800/320.1

## ABSTRACT:

The invention provides genetically engineered, preselected DNA sequences and methods of using them to alter the nutritional content of plant seed. Methods of the invention are directed to increasing the weight percent of at least one amino acid essential to the diet of animals, or increasing the starch content, of a plant. One such method involves stably transforming a cell of a plant with an a preselected DNA sequence encoding an RNA molecule substantially identical or complementary to a messenger RNA (mRNA) encoding a plant seed storage protein, preferably a seed storage protein which is deficient in at least one amino acid essential to the diet of animals. An alternative method employs stably transforming cells with at least two preselected DNA sequences, one of which encodes an RNA molecule substantially identical or complementary to a messenger RNA (mRNA) encoding a plant seed storage protein, and the other preselected DNA molecule which encodes a preselected polypeptide. The transformed cells are used to generate fertile transgenic plants and seeds. Transgenic seeds are characterized by expression of the preselected DNA sequence which results in a substantial inhibition of production of a seed storage protein deficient in at least one amino acid essential to the diet of animals and/or an increase in the weight percent of an amino acid essential to the diet of animals.

34 Claims, 13 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 13

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw D
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☐ 21. Document ID: US 6323023 B1

L9: Entry 21 of 50

File: USPT

Nov 27, 2001

US-PAT-NO: 6323023

DOCUMENT-IDENTIFIER: US 6323023 B1

TITLE: Vectors containing nucleic acids coding for Arabidopsis thaliana endo-1,4-.beta.-glucanase secretion signal peptide

DATE-ISSUED: November 27, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shoseyov; Oded	Karme Yosef			IL
Shani; Ziv	Rehovoth			IL

US-CL-CURRENT: 435/320.1; 435/69.8, 800/287, 800/288, 800/290

## ABSTRACT:

The present invention discloses genetically engineered plants which display altered structure or morphology. The transgenic plants express a cell wall modulation transgene or gene construct that results in the altered structure or morphology. The altered structure or morphology can be associated with, for example, altered biomass, growth, yield, greater or less resistance to biodegradation, more or less digestible to ruminants, altered cellulose content, larger leaves/normal hypocotyls or smaller leaves/longer hypocotyls, etc. compared to a non-transgenic plant of the same species. The cell wall modulation transgene can be any cellulose binding domain, a cellulose binding protein, or a cell wall modifying protein or enzyme such as endoxyloglucan transferase, xyloglucan endo-transglycosylase, an expansin, cellulose synthase, or a novel isolated endo-1,4-.beta.-glucanase of *Arabidopsis thaliana*. The invention also discloses transgenic plants containing a gene construct comprising a promoter operably linked to the cell wall modulation protein or polypeptide gene and may further comprise a sequence encoding a secretion signal peptide. In particular, the invention discloses transgenic plants containing a gene construct comprising the cell promoter, operably linked to the cell signal peptide and any cellulose binding domain. Methods for modulating plant growth by transgenic expression of a cell wall modulating protein or polypeptide are also disclosed. The present invention also discloses a novel, isolated *Arabidopsis thaliana* endo-1,4-.beta.-glucanase gene (cell), its promoter (cell promoter) and polypeptide (Cell) and recombinant nucleic acid vectors containing the cell gene with or without a secretion signal peptide sequence and/or the cell promoter.

12 Claims, 45 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 29

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw D
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☐ 22. Document ID: US 6316407 B1

L9: Entry 22 of 50

File: USPT

Nov 13, 2001

US-PAT-NO: 6316407

DOCUMENT-IDENTIFIER: US 6316407 B1

TITLE: Antifungal polypeptide from alfalfa and methods for controlling plant pathogenic fungi

DATE-ISSUED: November 13, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liang; Jihong	Chesterfield	MO		
Shah; Dilip Maganlal	Chesterfield	MO		
Wu; Yonnie S.	Wildwood	MO		
Rosenberger; Cindy A.	Ballwin	MO		
Hakimi; Salim	Chesterfield	MO		

US-CL-CURRENT: 514/12; 530/324

## ABSTRACT:

Antifungal polypeptides, isolated from Medicago plants, are shown to control fungal damage to plants. The polypeptides can be formulated into compositions useful in controlling undesired fungi.

6 Claims, 10 Drawing figures  
Exemplary Claim Number: 5  
Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Drawing
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☐ 23. Document ID: US 6284479 B1

L9: Entry 23 of 50

File: USPT

Sep 4, 2001

US-PAT-NO: 6284479  
DOCUMENT-IDENTIFIER: US 6284479 B1

TITLE: Substitutes for modified starch and latexes in paper manufacture

DATE-ISSUED: September 4, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nichols; Scott E.	Johnston	IA		

US-CL-CURRENT: 435/15; 162/100, 435/170, 435/18, 435/278, 435/4, 435/885, 435/886,  
536/1.11, 536/123.12, 536/124, 536/128, 536/18.5

## ABSTRACT:

The present invention provides methods of making paper, utilizing glucans, produced by the glucosyltransferase B, C or D enzyme of the species Streptococcus mutans, instead of modified starches. The present glucans are functionally similar to currently utilized modified starches and are particularly useful in the coating step of paper manufacture. The present glucans also exhibit thermoplastic properties and impart gloss to the paper during the coating step.

14 Claims, 5 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Drawing
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☐ 24. Document ID: US 6274790 B1

L9: Entry 24 of 50

File: USPT

Aug 14, 2001

US-PAT-NO: 6274790  
DOCUMENT-IDENTIFIER: US 6274790 B1

TITLE: Nucleic acids encoding a plant enzyme involved in very long chain fatty acid synthesis

DATE-ISSUED: August 14, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kunst; Ljerka	North Vancouver			CA
Millar; Anthony A.	Vancouver			CA

US-CL-CURRENT: 800/287; 435/468, 536/24.1, 800/281, 800/298

ABSTRACT:

Nucleic acid molecules encoding an enzyme involved in very long chain fatty acid (VLCFA) elongation in plants are disclosed. The invention includes a cDNA, genomic clone and encoded protein, as well as plants having modified VLCFA composition, such as modified epicuticular waxes, and methods of making such plants.

12 Claims, 1 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KBHC	Draw De
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☐ 25. Document ID: US 6235529 B1

L9: Entry 25 of 50

File: USPT

May 22, 2001

US-PAT-NO: 6235529

DOCUMENT-IDENTIFIER: US 6235529 B1

TITLE: Compositions and methods for plant transformation and regeneration

DATE-ISSUED: May 22, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lemaux; Peggy G.	Moraga	CA		
Cho; Myeong-Je	Alameda	CA		

US-CL-CURRENT: 435/430.1; 435/410, 435/420, 435/430, 435/431, 435/468, 800/278, 800/320

ABSTRACT:

Improved compositions and methods for transformation and regeneration of plants from embryogenic callus are disclosed that include, for example: use of an intermediate-incubation medium after callus induction to increase the competence of the transformed cells for regeneration; dim light conditions during early phases of selection; use of green callus tissue as a target for microprojectile bombardment; and media with optimized levels of phytohormones and copper concentrations.

14 Claims, 2 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw D
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☐ 26. Document ID: US 6232526 B1

L9: Entry 26 of 50

File: USPT

May 15, 2001

US-PAT-NO: 6232526  
DOCUMENT-IDENTIFIER: US 6232526 B1

TITLE: Maize A3 promoter and methods for use thereof

DATE-ISSUED: May 15, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Kriz; Alan L.	Gales Ferry	CT		
Orozco, Jr.; Emil M.	West Grove	PA		
Griffor; Matt	N. Stonington	CT		

US-CL-CURRENT: 800/278; 435/252.3, 435/320.1, 435/413, 435/414, 435/415, 435/416,  
435/417, 435/418, 435/419, 435/468, 435/69.1, 536/23.1, 536/23.6, 536/24.1,  
800/279, 800/281, 800/284, 800/287, 800/289, 800/290, 800/295, 800/298, 800/300,  
800/312, 800/314, 800/317.2, 800/317.3, 800/317.4, 800/320, 800/320.1, 800/320.2,  
800/320.3

ABSTRACT:

The current invention provides the maize A3 promoter and actin 2 intron. Compositions comprising these sequences are described, as well as transformation constructs derived therefrom. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the A3 promoter directly by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

63 Claims, 15 Drawing figures  
Exemplary Claim Number: 16,25,26,27  
Number of Drawing Sheets: 16

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw D
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☐ 27. Document ID: US 6222099 B1

L9: Entry 27 of 50

File: USPT

Apr 24, 2001

US-PAT-NO: 6222099

DOCUMENT-IDENTIFIER: US 6222099 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Transgenic plants expressing maize acetyl COA carboxylase gene and method of altering oil content

DATE-ISSUED: April 24, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gengenbach; Burle G.	St. Paul	MN		
Somers; David A.	Roseville	MN		
Wyse; Donald L.	Wyoming	MN		
Gronwald; John W.	Shoreview	MN		
Egli; Margaret A.	Roseville	MN		
Lutz; Sheila M.	St. Paul	MN		

US-CL-CURRENT: 800/298; 435/320.1, 800/281

## ABSTRACT:

The present invention provides a complete cDNA sequence and partial DNA sequences encoding maize acetyl CoA carboxylase and methods for altering the oil content of plants by introducing and expressing a maize acetyl CoA carboxylase gene in plant cells.

34 Claims, 35 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 29

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KIND	Draw D
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☐ 28. Document ID: US 6207879 B1

L9: Entry 28 of 50

File: USPT

Mar 27, 2001

US-PAT-NO: 6207879

DOCUMENT-IDENTIFIER: US 6207879 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Maize RS81 promoter and methods for use thereof

DATE-ISSUED: March 27, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Orozco, Jr.; Emil M.	West Grove	PA		
Iaccetti; Lucille B.	Groton	CT		

US-CL-CURRENT: 800/278; 435/252.3, 435/320.1, 435/418, 435/419, 435/468, 435/69.1,  
536/23.1, 536/23.6, 536/24.1, 800/279 , 800/281, 800/284, 800/287, 800/289,  
800/290, 800/292, 800/293, 800/294, 800/295, 800/298, 800/300, 800/301, 800/302,  
800/303, 800/306, 800/312, 800/314, 800/317, 800/317.2, 800/317.3, 800/317.4,  
800/320, 800/322

## ABSTRACT:

The current invention provides the maize RS81 promoter. Compositions comprising this sequence are described, as are plants transformed with such compositions. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the RS81 promoter by genetic transformation, as well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

66 Claims, 5 Drawing figures

Exemplary Claim Number: 16

Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KWIC	Draw De
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☐ 29. Document ID: US 6194636 B1

L9: Entry 29 of 50

File: USPT

Feb 27, 2001

US-PAT-NO: 6194636

DOCUMENT-IDENTIFIER: US 6194636 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Maize RS324 promoter and methods for use thereof

DATE-ISSUED: February 27, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McElroy; David	Palo Alto	CA		
Orozco, Jr.; Emil M.	West Grove	PA		
Laccetti; Lucille B.	Groton	CT		

US-CL-CURRENT: 800/278; 435/252.3, 435/320.1, 435/418, 435/419, 435/468, 435/69.1,  
536/23.1, 536/23.6, 536/24.1, 800/279 , 800/281, 800/284, 800/287, 800/289,  
800/290, 800/292, 800/293, 800/294, 800/295, 800/298, 800/300, 800/301, 800/302,  
800/303, 800/306, 800/312, 800/314, 800/317.2, 800/317.3, 800/317.4, 800/320.1,  
800/320.2, 800/320.3

## ABSTRACT:

The current invention provides the maize RS324 promoter. Compositions comprising this sequence are described, as are plants transformed with such compositions. Further provided are methods for the expression of transgenes in plants comprising the use of these sequences. The methods of the invention include the direct creation of transgenic plants with the RS324 promoter by genetic transformation, as

well as by plant breeding methods. The sequences of the invention represent a valuable new tool for the creation of transgenic plants, preferably having one or more added beneficial characteristics.

68 Claims, 8 Drawing figures

Exemplary Claim Number: 18

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KNIC	Draw D
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☐ 30. Document ID: US 6184440 B1

L9: Entry 30 of 50

File: USPT

Feb 6, 2001

US-PAT-NO: 6184440

DOCUMENT-IDENTIFIER: US 6184440 B1

TITLE: Transgenic plants of altered morphology

DATE-ISSUED: February 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shoseyov; Oded	Karme Yosef			IL
Shani; Ziv	Rehovoth			IL
Shpigel; Etai	Kibbutz Megido			IL

US-CL-CURRENT: 800/290; 435/419, 435/468, 435/69.7, 435/69.8, 800/284, 800/287, 800/288

ABSTRACT:

The present invention discloses genetically engineered plants which display altered structure or morphology. The transgenic plants express a cell wall modulation transgene or gene construct that results in the altered structure or morphology. The altered structure or Morphology can be associated with, for example, altered biomass, growth, yield, greater or less resistance to biodegradation, more or less digestible to ruminants, altered cellulose content, larger leaves/normal hypocotyls or smaller leaves/longer hypocotyls, etc. compared to a non-transgenic plant of the same species. The cell wall modulation transgene can be any cellulose binding domain, a cellulose binding protein, or a cell wall modifying protein or enzyme such as endoxyloglucan transferase, xyloglucan endo-transglycosylase, an expansin, cellulose synthase, or a novel isolated endo-1,4-.beta.-glucanase of Arabidopsis thaliana. The invention also discloses transgenic plants containing a gene construct comprising a promoter operably linked to the cell wall modulation protein or polypeptide gene and may further comprise a sequence encoding a secretion signal peptide. In particular, the invention discloses transgenic plants containing a gene construct comprising the cell promoter, operably linked to the cell signal peptide and any cellulose binding domain. Methods for modulating plant growth by transgenic expression of a cell wall modulating protein or polypeptide are also disclosed. The present invention also discloses a novel, isolated Arabidopsis thaliana endo-1,4-.beta.-glucanase gene (cell), its promoter (cell promoter) and polypeptide (Cell) and recombinant nucleic acid vectors containing the cell gene with or without a secretion signal peptide sequence and/or the cell promoter.



18 Claims, 47 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 29

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Draw D4
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☐ 31. Document ID: US 6166292 A

Using default format because multiple data bases are involved.

L9: Entry 31 of 50

File: USPT

Dec 26, 2000

US-PAT-NO: 6166292

DOCUMENT-IDENTIFIER: US 6166292 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Raffinose synthetase gene, method of producing raffinose and transgenic plant.

DATE-ISSUED: December 26, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Osumi; Chieko	Kawasaki			JP
Nozaki; Jinshi	Kawasaki			JP
Kida; Takao	Kawasaki			JP

US-CL-CURRENT: 800/284; 435/320.1, 435/410, 435/419, 435/468, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 800/278, 800/290, 800/295, 800/298

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KWIC	Draw De
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☐ 32. Document ID: US 6156953 A

L9: Entry 32 of 50

File: USPT

Dec 5, 2000

US-PAT-NO: 6156953

DOCUMENT-IDENTIFIER: US 6156953 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Plant artificial chromosome compositions and methods

DATE-ISSUED: December 5, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Preuss; Daphne	Chicago	IL		
Copenhaver; Gregory	Oak Park	IL		

US-CL-CURRENT: 800/278; 800/260, 800/268, 800/279, 800/281, 800/283, 800/284,  
800/289, 800/292, 800/293, 800/294, 800/295, 800/298, 800/306

## ABSTRACT:

The present invention provides for the identification and cloning of functional plant centromeres in Arabidopsis. This will permit construction of stably inherited plant artificial chromosomes (PLACs) which can serve as vectors for the construction of transgenic plant and animal cells. In addition, information on the structure and function of these regions will prove valuable in isolating additional centromeric and centromere related genetic elements and polypeptides from other species.

27 Claims, 7 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 40

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KIMAC	Draw. De
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☐ 33. Document ID: US 6121436 A

L9: Entry 33 of 50

File: USPT

Sep 19, 2000

US-PAT-NO: 6121436

DOCUMENT-IDENTIFIER: US 6121436 A

TITLE: Antifungal polypeptide and methods for controlling plant pathogenic fungi

DATE-ISSUED: September 19, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liang; Jihong	Chesterfield	MO		
Shah; Dilip Maganlal	Chesterfield	MO		
Wu; Yonnie S.	Wildwood	MO		
Rosenberger; Cindy A.	Ballwin	MO		
Hakimi; Salim	Chesterfield	MO		

US-CL-CURRENT: 536/23.6; 536/24.3

## ABSTRACT:

Antifungal polypeptides, isolated from Medicago plants, are shown to control fungal damage to plants. DNA encoding the polypeptides was cloned into vectors for transformation of plant-colonizing microorganisms or plants, thereby providing a method of inhibiting fungal growth on plants. The polypeptides can be formulated into compositions useful in controlling undesired fungi.

7 Claims, 10 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 34. Document ID: US 6096950 A

L9: Entry 34 of 50

File: USPT

Aug 1, 2000

US-PAT-NO: 6096950

DOCUMENT-IDENTIFIER: US 6096950 A

TITLE: Cotton fiber-specific promoters

DATE-ISSUED: August 1, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John; Maliyakal E.	Middleton	WI		

US-CL-CURRENT: 800/314; 435/320.1, 536/24.1

## ABSTRACT:

An isolated cotton fiber-specific promoter is disclosed. Preferably, this promoter comprises a nucleotide segment comprising at least 2.7 kb of the upstream genomic of a gene of the E6 family, or 1.7 kb of the upstream genomic family of the FbLate family.

6 Claims, 16 Drawing figures

Exemplary Claim Number: 1,2

Number of Drawing Sheets: 16

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 35. Document ID: US 6015891 A

L9: Entry 35 of 50

File: USPT

Jan 18, 2000

US-PAT-NO: 6015891

DOCUMENT-IDENTIFIER: US 6015891 A

**\*\* See image for Certificate of Correction \*\***TITLE: Synthetic insecticidal crystal protein gene having a modified frequency of codon usage

DATE-ISSUED: January 18, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adang; Michael J.	Athens	GA		
Murray; Elizabeth E.	Madison	WI		

US-CL-CURRENT: 536/23.71; 435/440, 435/468

## ABSTRACT:

Synthetic Baccilus thuringiensis toxin genes designed to be expressed in plants at a level higher than naturally-occurring Bt genes are provided. These genes utilize codons preferred in highly expressed monocot or dicot proteins.

6 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Draw De
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☐ 36. Document ID: US 6013863 A

L9: Entry 36 of 50

File: USPT

Jan 11, 2000

US-PAT-NO: 6013863

DOCUMENT-IDENTIFIER: US 6013863 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Fertile transgenic corn plants

DATE-ISSUED: January 11, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lundquist; Ronald C.	Minnetonka	MN		
Walters; David A.	Bloomington	MN		

US-CL-CURRENT: 800/293; 435/285.3, 435/430, 800/278, 800/288, 800/300

## ABSTRACT:

A process of preparing fertile Zea mays plants is provided wherein said plants are resistant to the herbicide glyphosate, as well as processes for preparing seed, human food or animal feed therefrom.

8 Claims, 8 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMIC	Draw De
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☐ 37. Document ID: US 6013523 A

L9: Entry 37 of 50

File: USPT

Jan 11, 2000

US-PAT-NO: 6013523

DOCUMENT-IDENTIFIER: US 6013523 A

**\*\* See image for Certificate of Correction \*\***TITLE: Transgenic plants comprising a synthetic insecticidal crystal protein gene having a modified frequency of codon usage

DATE-ISSUED: January 11, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adang; Michael J.	Madison	WI		
Murray; Elizabeth E.	Madison	WI		

US-CL-CURRENT: 435/419; 536/23.71

## ABSTRACT:

Synthetic Baccilus thuringiensis toxin genes designed to be expressed in plants at a level higher than naturally-occurring Bt genes are provided. These genes utilize codons preferred in highly expressed monocot or dicot proteins.

4 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KWAC	Draw. D
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☐ 38. Document ID: US 6013472 A

L9: Entry 38 of 50

File: USPT

Jan 11, 2000

US-PAT-NO: 6013472

DOCUMENT-IDENTIFIER: US 6013472 A

TITLE: GA4 DNA, protein and methods of use

DATE-ISSUED: January 11, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chiang; Hui-Hwa	Boston	MA		
Goodman; Howard M.	Newton Centre	MA		

US-CL-CURRENT: 435/69.1; 435/183, 435/252.3, 435/252.33, 435/254.11, 435/254.2, 435/419, 435/468, 435/471, 435/483, 435/484, 435/6, 435/70.1, 435/71.1, 530/350, 530/370, 530/377

## ABSTRACT:

The invention relates to the DNA and protein encoded by the GA4 locus. This protein is believed to be a member of the family of enzymes involved in the biosynthesis of the gibberellin family (GA) of plant growth hormones which promote various growth

and developmental processes in higher plants, such as seed germination, stem elongation, flowering and fruiting. More specifically, the protein encoded by the GA4 locus is an hydroxylase. The invention also relates to vectors containing the DNA and the expression of the protein encoded by the DNA of the invention in a host cell. Additional aspects of the invention are drawn to host cells transformed with the DNA or antisense sequence of the invention, the use of such host cells for the maintenance, or expression or inhibition of expression of the DNA of the invention and to transgenic plants containing DNA of the invention. Finally, the invention also relates to the use of the protein encoded by the GA4 locus to alter aspects of plant growth.

15 Claims, 9 Drawing figures  
Exemplary Claim Number: 14  
Number of Drawing Sheets: 8

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 39. Document ID: US 6005092 A

L9: Entry 39 of 50

File: USPT

Dec 21, 1999

US-PAT-NO: 6005092

DOCUMENT-IDENTIFIER: US 6005092 A

TITLE: Arabidopsis thaliana endo-1,4-.beta.-glucanase gene and promoter

DATE-ISSUED: December 21, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shoseyov; Oded	Karme Yosef			IL
Shani; Ziv	Rehovoth			IL

US-CL-CURRENT: 536/23.6; 435/209, 435/320.1, 435/419, 435/468, 536/24.1, 800/278, 800/290

ABSTRACT:

The present invention discloses genetically engineered plants which display altered structure or morphology. The transgenic plants express a cell wall modulation transgene or gene construct that results in the altered structure or morphology. The altered structure or morphology can be associated with, for example, altered biomass, growth, yield, greater or less resistance to biodegradation, more or less digestible to ruminants, altered cellulose content, larger leaves/normal hypocotyls or smaller leaves/longer hypocotyls, etc. compared to a non-transgenic plant of the same species. The cell wall modulation transgene can be any cellulose binding domain, a cellulose binding protein, or a cell wall modifying protein or enzyme such as endoxyloglucan transferase, xyloglucan endo-transglycosylase, an expansin, cellulose synthase, or a novel isolated endo-1,4-.beta.-glucanase of Arabidopsis thaliana. The invention also discloses transgenic plants containing a gene construct comprising a promoter operably linked to the cell wall modulation protein or polypeptide gene and may further comprise a sequence encoding a secretion signal peptide. In particular, the invention discloses transgenic plants containing a gene construct comprising the cell promoter, operably linked to the cell signal peptide

and any cellulose binding domain. Methods for modulating plant growth by transgenic expression of a cell wall modulating protein or polypeptide are also disclosed. The present invention also discloses a novel, isolated *Arabidopsis thaliana* endo-1,4- $\beta$ -glucanase gene (cell), its promoter (cell promoter) and polypeptide (Cell) and recombinant nucleic acid vectors containing the cell gene with or without a secretion signal peptide sequence and/or the cell promoter.

11 Claims, 32 Drawing figures  
Exemplary Claim Number: 1,9  
Number of Drawing Sheets: 29

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 40. Document ID: US 5952547 A

L9: Entry 40 of 50

File: USPT

Sep 14, 1999

US-PAT-NO: 5952547  
DOCUMENT-IDENTIFIER: US 5952547 A

TITLE: Modified *Bacillus thuringiensis* genes with improved expression in plant cells, methods of production on and use

DATE-ISSUED: September 14, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cornelissen; Marc	Heusden			BE
Soetaert; Piet	Laarne			BE
Stam; Maïke	Al Amstelveen			NL
Dockx; Jan	Turnhout			BE
Van Aarssen; Roel	Gent			BE

US-CL-CURRENT: 800/302; 204/456, 435/320.1, 435/419, 435/468, 435/91.2, 536/23.71, 800/279

ABSTRACT:

The invention relates to modified *Bacillus thurigiensis* genes with improved expression in plant cells, their preparation and uses. The invention relates more particularly to DNA fragments encoding all or part of a Bt insecticidal crystal protein, modified by translationally neutral modification(s) in cryptic promoter(s) and/or abortive intron(s). The invention also discloses method of preparing such modified DNAs, and methods of protecting plants from an insect pest.

27 Claims, 4 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 41. Document ID: US 5925807 A

L9: Entry 41 of 50

File: USPT

Jul 20, 1999

US-PAT-NO: 5925807

DOCUMENT-IDENTIFIER: US 5925807 A

TITLE: GA4 DNA, protein and method of use

DATE-ISSUED: July 20, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Chiang; Hui-Hwa	Cambridge	MA		
Goodman; Howard M.	Newton Centre	MA		

US-CL-CURRENT: 800/298; 435/252.3, 435/254.2, 435/320.1, 435/419, 435/468,  
435/69.1, 435/70.1, 536/23.6, 536/24.1, 536/24.5, 800/278, 800/286, 800/290

## ABSTRACT:

The invention relates to the DNA and protein encoded by the GA4 locus. This protein is believed to be a member of the family of enzymes involved in the biosynthesis of the gibberellin family (GA) of plant growth hormones which promote various growth and developmental processes in higher plants, such as seed germination, stem elongation, flowering and fruiting. More specifically, the protein encoded by the GA4 locus is an hydroxylase. The invention also relates to vectors containing the DNA and the expression of the protein encoded by the DNA of the invention in a host cell. Additional aspects of the invention are drawn to host cells transformed with the DNA or antisense sequence of the invention, the use of such host cells for the maintenance, or expression or inhibition of expression of the DNA of the invention and to transgenic plants containing DNA of the invention. Finally, the invention also relates to the use of the protein encoded by the GA4 locus to alter aspects of plant growth.

17 Claims, 12 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 9

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 42. Document ID: US 5869720 A

L9: Entry 42 of 50

File: USPT

Feb 9, 1999

US-PAT-NO: 5869720

DOCUMENT-IDENTIFIER: US 5869720 A

TITLE: Transgenic cotton plants producing heterologous peroxidase

DATE-ISSUED: February 9, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John; Maliyakal E.	Middleton	WI		

US-CL-CURRENT: 800/314; 536/24.1, 800/287

## ABSTRACT:

A fiber-producing plant comprising in its genome a heterologous genetic construct is disclosed. This genetic construct comprises a fiber-specific promoter and a coding sequence encoding a plant peroxidase. Preferably, the coding sequence is for cotton peroxidase. Seeds of the plant containing this genetic construct and plant cells containing this construct are also disclosed.

8 Claims, 22 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 17

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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☐ 43. Document ID: US 5608148 A

L9: Entry 43 of 50

File: USPT

Mar 4, 1997

US-PAT-NO: 5608148

DOCUMENT-IDENTIFIER: US 5608148 A

TITLE: Transgenic cotton plants producing heterologous peroxidase

DATE-ISSUED: March 4, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John; Maliyakal E.	Middleton	WI		

US-CL-CURRENT: 800/314; 435/419

## ABSTRACT:

A fiber-producing plant comprising in its genome a heterologous genetic construct is disclosed. This genetic construct comprises a fiber-specific promoter and a coding sequence encoding a plant peroxidase. Preferably, the coding sequence is for cotton peroxidase. Seeds of the plant containing this genetic construct and plant cells containing this construct are also disclosed.

9 Claims, 17 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 17

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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☐ 44. Document ID: US 5608143 A

L9: Entry 44 of 50

File: USPT

Mar 4, 1997

US-PAT-NO: 5608143

DOCUMENT-IDENTIFIER: US 5608143 A

TITLE: External regulation of gene expression

DATE-ISSUED: March 4, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hershey; Howard P.	West Chester	PA		
Katayama; Carol D.	Encinitas	CA		
Ralston; Edward J.	Pleasant Hill	CA		
Stoner; Timothy D.	New Freedom	PA		
Wong; James F.	Newark	DE		

US-CL-CURRENT: 800/298; 435/320.1, 536/24.1, 800/300, 800/302, 800/306, 800/317.3,  
800/320, 800/320.1, 800/320.2, 800/323.1, 800/323.2

## ABSTRACT:

The preparation and use of nucleic acid promoter fragments derived from several genes from corn, petunia and tobacco which are highly responsive to a number of substituted benzenesulfonamides and related compounds are described. These promoter fragments are useful in creating recombinant DNA constructions comprising nucleic acid sequences encoding any desired gene product operably linked to such promoter fragments which can be utilized to transform plants and bring the expression of the gene product under external chemical control in various tissues of monocotyledonous and dicotyledonous plants.

12 Claims, 39 Drawing figures

Exemplary Claim Number: 7

Number of Drawing Sheets: 39

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KMIC	Draw D
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☐ 45. Document ID: US 5602321 A

L9: Entry 45 of 50

File: USPT

Feb 11, 1997

US-PAT-NO: 5602321

DOCUMENT-IDENTIFIER: US 5602321 A

TITLE: Transgenic cotton plants producing heterologous polyhydroxy(e) butyrate bioplastic

DATE-ISSUED: February 11, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John; Maliyakal	Middleton	WI		

US-CL-CURRENT: 800/314; 435/252.3, 435/419, 435/69.1, 536/23.1, 536/23.2, 536/23.6, 536/24.1

## ABSTRACT:

A fiber-producing plant comprising in its genome a heterologous genetic construct is disclosed. This genetic construct comprises a fiber-specific promoter and a coding sequence selected from the group consisting of sequences encoding bioplastic-producing genes. Preferably, the coding sequence is selected from the group consisting of ketothiolase, acetoacetyl-CoA reductase, and PHB synthase. Seeds of the plant containing this genetic construct and plant cells containing this construct are also disclosed.

12 Claims, 4 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 46. Document ID: US 5567862 A

L9: Entry 46 of 50

File: USPT

Oct 22, 1996

US-PAT-NO: 5567862

DOCUMENT-IDENTIFIER: US 5567862 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Synthetic insecticidal crystal protein gene

DATE-ISSUED: October 22, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adang; Michael J.	Madison	WI		
Rocheleau; Thomas A.	Madison	WI		
Merlo; Donald J.	Madison	WI		
Murray; Elizabeth E.	Madison	WI		

US-CL-CURRENT: 800/302; 435/418, 435/468, 435/69.1

## ABSTRACT:

Synthetic Bacillus thuringiensis toxin genes designed to be expressed in plants at a level higher than naturally-occurring Bt genes are provided. These genes utilize codons preferred in highly expressed monocot or dicot proteins.

24 Claims, 5 Drawing figures  
Exemplary Claim Number: 1,13

Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 47. Document ID: US 5567600 A

L9: Entry 47 of 50

File: USPT

Oct 22, 1996

US-PAT-NO: 5567600

DOCUMENT-IDENTIFIER: US 5567600 A

**\*\* See image for Certificate of Correction \*\***TITLE: Synthetic insecticidal crystal protein gene

DATE-ISSUED: October 22, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adang; Michael J.	Athens	GA		
Rocheleau; Thomas A.	Madison	WI		
Merlo; Donald J.	Carmel	IN		
Murray; Elizabeth E.	Madison	WI		

US-CL-CURRENT: 536/23.71; 435/418, 435/468, 435/469, 435/470, 435/69.1, 800/279

## ABSTRACT:

Synthetic Baccilus thuringiensis toxin genes designed to be expressed in plants at a level higher than naturally-occurring Bt genes are provided. These genes utilize codons preferred in highly expressed monocot or dicot proteins.

24 Claims, 5 Drawing figures

Exemplary Claim Number: 1,13

Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 48. Document ID: US 5380831 A

L9: Entry 48 of 50

File: USPT

Jan 10, 1995

US-PAT-NO: 5380831

DOCUMENT-IDENTIFIER: US 5380831 A

**\*\* See image for Certificate of Correction \*\***TITLE: Synthetic insecticidal crystal protein gene

DATE-ISSUED: January 10, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adang; Michael J.	Madison	WI		
Rocheleau; Thomas A.	Madison	WI		
Merlo; Donald J.	Madison	WI		
Murray; Elizabeth E.	Madison	WI		

US-CL-CURRENT: 536/23.71; 435/69.1, 435/91.1, 435/91.5, 435/91.52

## ABSTRACT:

Synthetic Bacillus thuringiensis toxin genes designed to be expressed in plants at a level higher than naturally-occurring Bt genes are provided. These genes utilize codons preferred in highly expressed monocot or dicot proteins.

14 Claims, 3 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 49. Document ID: US 5364780 A

L9: Entry 49 of 50

File: USPT

Nov 15, 1994

US-PAT-NO: 5364780

DOCUMENT-IDENTIFIER: US 5364780 A

TITLE: External regulation of gene expression by inducible promoters

DATE-ISSUED: November 15, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hershey; Howard P.	West Chester	PA		
Katayama; Carol D.	Encinitas	CA		
Ralston; Edward J.	Pleasant Hill	CA		
Stoner; Timothy D.	New Freedom	PA		
Wong; James F.	Newark	DE		

US-CL-CURRENT: 800/294; 435/320.1, 536/24.1

## ABSTRACT:

The preparation and use of nucleic acid promoter fragments derived from several genes from corn, petunia and tobacco which are highly responsive to a number of substituted benzenesulfonamides and related compounds are described. These promoter fragments are useful in creating recombinant DNA constructions comprising nucleic acid sequences encoding any desired gene product operably linked to such promoter fragments which can be utilized to transform plants and bring the expression of the gene product under external chemical control in various tissues of monocotyledonous and dicotyledonous plants.

31 Claims, 28 Drawing figures  
Exemplary Claim Number: 13  
Number of Drawing Sheets: 39

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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☐ 50. Document ID: US 5283184 A

L9: Entry 50 of 50

File: USPT

Feb 1, 1994

US-PAT-NO: 5283184

DOCUMENT-IDENTIFIER: US 5283184 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Genetic engineering of novel plant phenotypes

DATE-ISSUED: February 1, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jorgensen; Richard A.	Davis	CA		
Napoli; Carolyn A.	Davis	CA		

US-CL-CURRENT: 800/285; 435/320.1, 800/300, 800/317.3, 800/323.1, 800/323.2

ABSTRACT:

Methods are provided for producing plants exhibiting one or more desired phenotypic traits. In particular, transgenotes are selected that comprise a DNA segment operably linked to a promoter, wherein transcription products of the segment are substantially homologous to corresponding transcripts of endogenous flavonoid biosynthetic pathway genes.

31 Claims, 3 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw De
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Terms	Documents
L2 and (alfalfa or sativa)	50

Display Format:

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[Next Page](#)

[Go to Doc#](#)



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Print

Fwd Refs

Bkwd Refs

Generate OACS

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**Search Results - Record(s) 1 through 30 of 56 returned.**

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☐ 1. Document ID: US 20050050591 A1

L7: Entry 1 of 56

File: PGPB

Mar 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050050591

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050050591 A1

TITLE: Novel plant cyclin

PUBLICATION-DATE: March 3, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Miskolczi, Pal	Keoskernet		HU	
Pettko-Szandtner, Aladar	Szeged		HU	
Horvath, Gabor	Szeged		HU	
Dudits, Denes	Szeged		HU	
Feher, Attila	Szeged		HU	
Gyobgyey, Janos	Deszk		HU	

US-CL-CURRENT: [800/290](#); [435/252.3](#), [435/320.1](#), [435/6](#), [530/370](#), [530/387.1](#), [536/23.6](#), [800/278](#), [800/279](#), [800/298](#)

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Dg
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☐ 2. Document ID: US 20050048609 A1

L7: Entry 2 of 56

File: PGPB

Mar 3, 2005

PGPUB-DOCUMENT-NUMBER: 20050048609

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050048609 A1

TITLE: Novel fluorescent and colored proteins, and polynucleotides that encode these proteins

PUBLICATION-DATE: March 3, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Matz, Mikhail Vladimirovitch	Palm Coast	FL	US	

Kelmanson, Ilya Vladimirovitch	Moscow	FL	RU
Meleshkevitch, Ella A.	Palm Coast		US
Salih, Anya	Sydney		AU

US-CL-CURRENT: [435/69.1](#); [435/320.1](#), [435/325](#), [530/350](#), [536/23.5](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Da
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☐ 3. Document ID: US 20050044594 A1

L7: Entry 3 of 56

File: PGPB

Feb 24, 2005

PGPUB-DOCUMENT-NUMBER: 20050044594  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20050044594 A1

TITLE: Method for modifying plant morphology, biochemistry and physiology

PUBLICATION-DATE: February 24, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schmulling, Thomas	Berlin		DE	
Werner, Tomas	Berlin		DE	

US-CL-CURRENT: [800/290](#); [435/25](#), [435/252.3](#), [435/320.1](#), [435/419](#), [530/370](#), [536/23.6](#), [800/298](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Da
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☐ 4. Document ID: US 20050034195 A1

L7: Entry 4 of 56

File: PGPB

Feb 10, 2005

PGPUB-DOCUMENT-NUMBER: 20050034195  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20050034195 A1

TITLE: Seed-coat promoters, genes and gene products

PUBLICATION-DATE: February 10, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Miki, Brian	Ottawa		CA	
Gijzen, Mark	London		CA	
Miller, Shea	Ottawa		CA	

US-CL-CURRENT: [800/298](#); [435/320.1](#), [435/419](#), [530/370](#), [536/23.6](#), [800/290](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 5. Document ID: US 20050013855 A1

L7: Entry 5 of 56

File: PGPB

Jan 20, 2005

PGPUB-DOCUMENT-NUMBER: 20050013855

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050013855 A1

TITLE: Cochleate compositions directed against expression of proteins

PUBLICATION-DATE: January 20, 2005

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gould-Fogerite, Susan	Annandale	NJ	US	
Mannino, Raphael J.	Annandale	NJ	US	
Ahl, Patrick	Princeton	NJ	US	
Shang, Gaofeng	Livingston	NJ	US	
Chen, Zi Wei	Newark	NJ	US	
Krause-Elsmore, Sara L.	Kearny	NJ	US	

US-CL-CURRENT: 424/450; 514/44, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 6. Document ID: US 20040241799 A1

L7: Entry 6 of 56

File: PGPB

Dec 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040241799

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040241799 A1

TITLE: Methods of directing C-O bond formation utilizing a type II polyketide synthase system

PUBLICATION-DATE: December 2, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shen, Ben	Verona	WI	US	
Kwon, Hyung-Jin	Austin	TX	US	

US-CL-CURRENT: 435/69.1; 435/189, 435/320.1, 435/325, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 7. Document ID: US 20040221332 A1

L7: Entry 7 of 56

File: PGPB

Nov 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040221332

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040221332 A1

TITLE: Plant growth regulating genes, proteins and uses thereof

PUBLICATION-DATE: November 4, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lorbiecke, Rene	Quickborn		DE	
Mironov, Vladimir	Sint-Amandsberg		BE	
Frankard, Valerie	Brussel		BE	
Dillen, Willy	Sint-Amandsberg		BE	
LeJeune, Pierre	Dolembreux		BE	
Broekaert, Willem	Dilbeek		BE	
Sauter, Margret	Hamburg		DE	

US-CL-CURRENT: 800/279; 530/370, 536/23.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 8. Document ID: US 20040216189 A1

L7: Entry 8 of 56

File: PGPB

Oct 28, 2004

PGPUB-DOCUMENT-NUMBER: 20040216189

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040216189 A1

TITLE: Maize chloroplast aldolase promoter compositions and methods for use thereof

PUBLICATION-DATE: October 28, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Houmard, Nancy	North Stonington	CT	US	
Laccetti, Lucille B.	Groton	CT	US	
Kausch, Albert P.	Stonington	CT	US	
Orozco, Emil M. JR.	West Grove	PA	US	

US-CL-CURRENT: 800/287; 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 9. Document ID: US 20040172686 A1

L7: Entry 9 of 56

File: PGPB

Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040172686

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040172686 A1

TITLE: Plant development regulating gene and its uses

PUBLICATION-DATE: September 2, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Scheres, Ben	AC Utrecht		NL	
Blilou, Ikram	SB Utrecht		NL	
Basten-Folmer, Saskia	Amsterdam		NL	

US-CL-CURRENT: 800/287; 504/117

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWAC	Draw D
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☐ 10. Document ID: US 20040117874 A1

L7: Entry 10 of 56

File: PGPB

Jun 17, 2004

PGPUB-DOCUMENT-NUMBER: 20040117874

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040117874 A1

TITLE: Methods for accumulating translocated proteins

PUBLICATION-DATE: June 17, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Yang, Jianjun	Hockessin	DE	US	

US-CL-CURRENT: 800/287; 435/419, 435/468, 435/69.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWAC	Draw D
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☐ 11. Document ID: US 20040111218 A1

L7: Entry 11 of 56

File: PGPB

Jun 10, 2004

PGPUB-DOCUMENT-NUMBER: 20040111218

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040111218 A1

TITLE: Methods and compositions for determining enzymatic activity and specificity

of methlytransferases

PUBLICATION-DATE: June 10, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Noel, Joseph P	San Diego	CA	US	
Zubieta, Chloe	Grenoble	OK	FR	
Dixon, Richard	Ardmore		US	

US-CL-CURRENT: 702/19; 435/193

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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☐ 12. Document ID: US 20040106175 A1

L7: Entry 12 of 56

File: PGPB

Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040106175

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040106175 A1

TITLE: Methods of producing polyketide synthase mutants and compositions and uses thereof

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Noel, Joseph P.	San Diego	CA	US	
Austin, Michael B	La Jolla	CA	US	
Bowman, Marianne E	San Diego	CA	US	

US-CL-CURRENT: 435/69.1; 435/193, 435/252.3, 435/320.1, 435/455, 435/471, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC	Draw De
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☐ 13. Document ID: US 20040096955 A1

L7: Entry 13 of 56

File: PGPB

May 20, 2004

PGPUB-DOCUMENT-NUMBER: 20040096955

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040096955 A1

TITLE: Methods and compositions for determining isomerase enzymatic activity

PUBLICATION-DATE: May 20, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Noel, Joseph P	San Diego	CA	US	
Jez, Joseph M	Kirkwood	MO	US	
Bowman, Marianne E	San Diego	CA	US	

US-CL-CURRENT: 435/233; 435/320.1, 435/325, 435/69.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 14. Document ID: US 20040096861 A1

L7: Entry 14 of 56

File: PGPB

May 20, 2004

PGPUB-DOCUMENT-NUMBER: 20040096861  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040096861 A1

TITLE: Oryza sativa nuclear cap binding protein 80

PUBLICATION-DATE: May 20, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kreps, Joel	Carlsbad	CA	US	
Neru, Pamela S.	Philadelphia	PA	US	

US-CL-CURRENT: 435/6; 435/320.1, 435/419, 435/69.1, 530/370, 536/23.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw De
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☐ 15. Document ID: US 20040091900 A1

L7: Entry 15 of 56

File: PGPB

May 13, 2004

PGPUB-DOCUMENT-NUMBER: 20040091900  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040091900 A1

TITLE: Materials and methods for providing plants with increased resistance to environmental stress

PUBLICATION-DATE: May 13, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Guy, Charles L.	Gainesville	FL	US	
Kaplan, Fatma	Gainesville	FL	US	
Sung, Dong Yul	San Diego	CA	US	

US-CL-CURRENT: 435/6; 800/284

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 16. Document ID: US 20040086911 A1

L7: Entry 16 of 56

File: PGPB

May 6, 2004

PGPUB-DOCUMENT-NUMBER: 20040086911

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040086911 A1

TITLE: Inhibition of gene expression in vertebrates using double-stranded RNA (RNAi)

PUBLICATION-DATE: May 6, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Cabello, Olga A.	Houston	TX	US	
Overbeek, Paul A.	Houston	TX	US	

US-CL-CURRENT: 435/6; 514/44, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 17. Document ID: US 20040078847 A1

L7: Entry 17 of 56

File: PGPB

Apr 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040078847

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040078847 A1

TITLE: Method of enhancing entomophilous

PUBLICATION-DATE: April 22, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Paladi, Nitzan	D.N. Ha'Ela		IL	

US-CL-CURRENT: 800/284; 800/287

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 18. Document ID: US 20040077090 A1

L7: Entry 18 of 56

File: PGPB

Apr 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040077090



PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040077090 A1

TITLE: Whole cell engineering by mutagenizing a substantial portion of a starting genome, combining mutations, and optionally repeating

PUBLICATION-DATE: April 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Short, Jay M.	Rancho Santa Fe	CA	US	

US-CL-CURRENT: 435/471; 435/252.3, 435/254.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 19. Document ID: US 20040067506 A1

L7: Entry 19 of 56

File: PGPB

Apr 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040067506  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040067506 A1

TITLE: Novel root specific promoter driving the expression of a novel lrr receptor-like kinase

PUBLICATION-DATE: April 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Scheres, Ben	Ac Utrecht		NL	
Heidstra, Renze	Lh Utrecht		NL	

US-CL-CURRENT: 435/6; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 20. Document ID: US 20040049808 A1

L7: Entry 20 of 56

File: PGPB

Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040049808  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040049808 A1

TITLE: Chitinase encoding DNA molecules from cotton expressed preferentially in secondary walled cells during secondary wall deposition and a corresponding promoter

PUBLICATION-DATE: March 11, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Haigler, Candace H.	Lubbock	TX	US	
Zhang, Hong	Lubbock	TX	US	
Wu, Chunfa	Lubbock	TX	US	
Wan, Chun-Hua	Gaithersburg	MA	US	
Zhang, Deshui	Lubbock	TX	US	

US-CL-CURRENT: 800/284; 435/209, 435/6, 536/23.2, 800/314

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 21. Document ID: US 20040045049 A1

L7: Entry 21 of 56

File: PGPB

Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040045049

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040045049 A1

TITLE: Polynucleotides and polypeptides in plants

PUBLICATION-DATE: March 4, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zhang, James	Palo Alto	CA	US	
Fromm, Michael E.	Lincoln	NE	US	
Heard, Jacqueline E.	San Mateo	CA	US	
Riechmann, Jose Luis	Pasadena	CA	US	
Adam, Luc J.	Hayward	CA	US	
Broun, Pierre E.	York	FL	GB	
Pineda, Omaira	Vero Beach	CA	US	
Reuber, T. Lynne	San Mateo	CA	US	
Keddie, James S.	San Mateo	CA	US	
Yu, Guo-Liang	Berkeley	CA	US	
Jiang, Cai-Zhong	Fremont	CA	US	
Samaha, Raymond S.	Capitola	PA	US	
Pilgrim, Marsha L.	Phoenixville	CA	US	
Creelman, Robert A.	Castro Valley	CA	US	
DuBell, Arnold N.	San Leandro	CA	US	
Ratcliffe, Oliver	Oakland	CA	US	
Kumimoto, Roderick	San Bruno	CA	US	
Sherman, Bradley K.	Berkeley		US	

US-CL-CURRENT: 800/278; 435/468

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 22. Document ID: US 20040038407 A1

L7: Entry 22 of 56

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040038407

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040038407 A1

TITLE: Genetic sequences encoding dominant-negative chalcone synthase and uses therefore

PUBLICATION-DATE: February 26, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hanummappa, Mamatha	Kwangju		KR	
Choi, Goh	Kwangju		KR	
Choi, Giltso	Kwangju		KR	

US-CL-CURRENT: 435/468; 435/320.1, 536/23.6, 800/278, 800/282

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC	Draw D
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☐ 23. Document ID: US 20040031073 A1

L7: Entry 23 of 56

File: PGPB

Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040031073

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040031073 A1

TITLE: Method for modifying plant morphology, biochemistry and physiology

PUBLICATION-DATE: February 12, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schmulling, Thomas	Berlin		DE	
Werner, Tomas	Berlin		DE	

US-CL-CURRENT: 800/287; 435/191, 435/468, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC	Draw D
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☐ 24. Document ID: US 20040019927 A1

L7: Entry 24 of 56

File: PGPB

Jan 29, 2004

PGPUB-DOCUMENT-NUMBER: 20040019927

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040019927 A1

TITLE: Polynucleotides and polypeptides in plants

PUBLICATION-DATE: January 29, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sherman, Bradley K.	Berkeley	CA	US	
Riechmann, Jose Luis	Pasadena	CA	US	
Jiang, Cai-Zhong	Fremont	CA	US	
Heard, Jacqueline E.	San Mateo	CA	US	
Haake, Volker	Menlo Park	CA	US	
Creelman, Robert A.	Castro Valley	CA	US	
Ratcliffe, Oliver	Oakland	CA	US	
Adam, Luc J.	Hayward	CA	US	
Reuber, T. Lynne	San Mateo	CA	US	
Keddie, James	San Mateo	CA	US	
Broun, Pierre E.	San Mateo	CA	US	
Pilgrim, Marsha L.	Phoenixville	PA	US	
DuBell, Arnold N. III	San Leandro	CA	US	
Pineda, Omaira	Vero Beach	FL	US	
Yu, Guo-Liang	Berkeley	CA	US	

US-CL-CURRENT: [800/278](#); [435/320.1](#), [435/419](#), [435/69.1](#), [530/370](#), [536/23.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 25. Document ID: US 20040019926 A1

L7: Entry 25 of 56

File: PGPB

Jan 29, 2004

PGPUB-DOCUMENT-NUMBER: 20040019926

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040019926 A1

TITLE: Novel plant cyclin-dependent kinase inhibitors

PUBLICATION-DATE: January 29, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Frankard, Valerie Marie-Noelle S.	Bruxelles		BE	
Peres Bota, Adrian Marius	Brakel		BE	
Droual, Anne-Marie	Lille		FR	
Mironov, Vladimir	Gent		BE	
Inze, Dirk	Moorsel-Aalst		BE	
Hatzfeld, Yves	Lille		FR	

US-CL-CURRENT: 800/278; 504/117

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 26. Document ID: US 20040019925 A1

L7: Entry 26 of 56

File: PGPB

Jan 29, 2004

PGPUB-DOCUMENT-NUMBER: 20040019925

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040019925 A1

TITLE: Biochemistry-related polynucleotides and polypeptides in plants

PUBLICATION-DATE: January 29, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Heard, Jacqueline E.	San Mateo	CA	US	
Riechmann, Jose Luis	Pasadena	CA	US	
Creelman, Robert A.	Castro Valley	CA	US	
Keddie, James	San Mateo	CA	US	
Pilgrim, Marsha L.	Phoenixville	PA	US	
DuBell, Arnold N.	San Leandro	CA	US	
Jiang, Cai-Zhong	Fremont	CA	US	
Ratcliffe, Oliver	Oakland	CA	US	
Pineda, Omaira	Vero Beach	FL	US	
Yu, Guo-Liang	Berkeley	CA	US	
Broun, Pierre E.	San Mateo	CA	US	

US-CL-CURRENT: 800/278; 800/281, 800/284

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 27. Document ID: US 20040016025 A1

L7: Entry 27 of 56

File: PGPB

Jan 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040016025

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040016025 A1

TITLE: Rice promoters for regulation of plant expression

PUBLICATION-DATE: January 22, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Budworth, Paul	San Diego	CA	US	

Moughamer, Todd	San Diego	CA	US
Briggs, Steven P.	Del Mar	CA	US
Cooper, Bret	La Jolla	CA	US
Glazebrook, Jane	San Diego	CA	US
Goff, Stephen Arthur	Encinitas	CA	US
Katagiri, Fumiaki	San Diego	CA	US
Kreps, Joel	Carlsbad	CA	US
Provar, Nicholas	Toronto	CA	CA
Ricke, Darrell	San Diego	CA	US
Zhu, Tong	San Diego		US

US-CL-CURRENT: 800/287; 435/320.1, 435/419, 800/312, 800/320, 800/320.1, 800/320.2, 800/320.3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 28. Document ID: US 20040003430 A1

L7: Entry 28 of 56

File: PGPB

Jan 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040003430

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040003430 A1

TITLE: 4-ketocarotenoids in flower petals

PUBLICATION-DATE: January 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hauptmann, Randal	Oswego	IL	US	
Eisenreich, Robert	North Aurora	IL	US	
Eschenfeldt, William	St. Charles	IL	US	
Khambatta, Zubin	Orland Park	IL	US	

US-CL-CURRENT: 800/282; 424/778

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 29. Document ID: US 20040002105 A1

L7: Entry 29 of 56

File: PGPB

Jan 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040002105

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040002105 A1

TITLE: Methods of identifying genes for the manipulation of triterpene saponins

PUBLICATION-DATE: January 1, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Dixon, Richard A.	Ardmore	OK	US	
Achnine, Lahoucine	Ardmore	OK	US	
Suzuki, Hideyuki	Kisarazu-shi	OK	JP	
He, Xian-Zhi	Ardmore	OK	US	
Wang, Liangjiang	Ardmore		US	

US-CL-CURRENT: 435/6; 435/7.2, 800/278

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 30. Document ID: US 20030233679 A1

L7: Entry 30 of 56

File: PGPB

Dec 18, 2003

PGPUB-DOCUMENT-NUMBER: 20030233679

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030233679 A1

TITLE: Methods for controlling gibberellin levels

PUBLICATION-DATE: December 18, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brown, Sherri M.	Chesterfield	MO	US	
Elich, Tedd D.	Ballwin	MO	US	
Heck, Gregory R.	<u>Crystal Lake Park</u>	MO	US	
Kishore, Ganesh M.	St. Louis	MO	US	
Logusch, Eugene W.	Chesterfield	MO	US	
Logusch, Sherry J.	Chesterfield	MO	US	
Piller, Kenneth J.	St. Louis	MO	US	
Rao, Sudabathula	St. Louis	MO	US	
Ream, Joel E.	St. Louis	MO	US	
Baerson, Scott R.	St. Louis	MO	US	

US-CL-CURRENT: 800/286; 800/288

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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Terms	Documents
L6 and (alfalfa or sativa)	56

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